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Author:

**Metropolitan Life
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Title:

Budget procedure

Place:

New York

Date:

1927-33

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... Budget procedure. New York, Metropolitan
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15 pamphlets in 1 v.

Prepared by Policyholders service bureau.
Contents.--1. The bonus and the budget.--2.
Budgeting manufacturing operations.--3. A manual
of budget procedure.--4. The manufacturing ex-
pense budget.--5. A budget procedure through
standard costs.--6. Forecasting sales in
(Continued on next card)

BUSINESS
432.8
M5633

Metropolitan life insurance company, New York.
Policyholders service bureau. Budget proce-
dure. 1927-33. (Card 2)

connection with a budget procedure.--7. Budgeting
for automobile dealers.--8. Budgeting for the
bank.--9. Budget methods of the brick and clay
industry.--10. The budgetary control procedure
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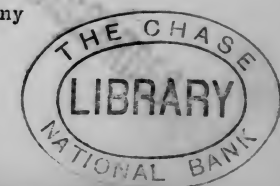


METROPOLITAN LIFE INSURANCE COMPANY

BUDGET PROCEDURE

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New York
Metropolitan Life Insurance Company
1927-1933.



Business
Gt Chase National Bank
12/9/44 Railway

Business

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- Budgeting Manufacturing Operations.
- A Manual of Budget Procedure.
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- A Budget Procedure Through Standard Costs.
- Forecasting Sales in Connection with a Budget Procedure.
- Budgeting for Automobile Dealers.
- Budgeting for the Bank.
- Budget Methods of the Brick and Clay Industry.
- The Budgetary Control Procedure of a Cotton Mill.
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- Budgeting for Hotels.
- Budget for an Investment House.
- Budget Suggestions for Shoe Manufacturers.
- Budgeting for Metal Working Establishments.

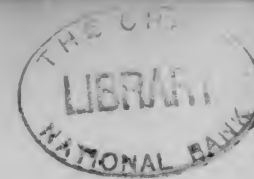
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THE BONUS AND THE BUDGET

REPORT NO. 83



PREPARED BY
POLICYHOLDERS' SERVICE BUREAU—GROUP INSURANCE DIVISION
METROPOLITAN LIFE INSURANCE COMPANY
Pacific Coast Head Office *HOME OFFICE* *Canadian Head Office*
San Francisco *NEW YORK* *Ottawa*



THE BONUS AND THE BUDGET

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FOREWORD

THIS report has been prepared by the Policyholders' Service Bureau for the benefit of Metropolitan group insurance policyholders interested in establishing and administering a bonus plan for employees as an incentive to keep departmental expenses within the limits of the Budget.

Through its intimate contacts with governmental and commercial agencies and large employers of labor, the Bureau has gathered a fund of information on budgeting and other business management problems. Group insurance policyholders are invited to make use of this clearing house of information freely and fully, and to consult the Bureau relative to their individual problems.

Correspondence should be addressed to:

POLICYHOLDERS' SERVICE BUREAU

THE BONUS AND THE BUDGET

THE use of the bonus principle as an extra incentive to employees, whether they be salesmen, office workers, factory hands or other classes of employees, is not new. Properly planned and carefully administered, the bonus is one of the most encouraging stimulants which can be offered to the worker for increased production. Not only does it give the employee something to look forward to, in addition to his regular salary, but in many departments of the business its application results in an appreciable decrease in expense at a relatively small cost to the company.

A BONUS PLAN NOT ALWAYS PRACTICAL

On the other hand, a bonus plan is not always practical or desirable. With regard to the use of a bonus as a device for reducing expenses, one company says:

In the case of a large company such as ours an estimated saving in expenses usually cannot be used as a basis for paying a bonus. This is particularly true when savings in expenses for the company as a whole are used. Unusually good effort on the part of one department might be more than offset by unsatisfactory efforts and results in other departments. The first department would get no benefit from the bonus. On such a basis a bonus would work for dissatisfaction.

Moreover "savings in expenses" is not the final

test by which the accomplishment of a department can be measured. Unit cost is a much more significant index. If tonnage fluctuates considerably, unit cost usually fluctuates inversely. In so far as tonnage is not usually determined by the efforts of the individual department, a saving in unit cost is not likely to prove a satisfactory basis for paying a bonus.

If standards could be set up determining what expenses should be at various levels of tonnage, reduction of expenses below this standard might be used. But the standard is difficult to determine.

The success of a budget plan depends, among other things, upon the cooperation of employees. It is obviously of no value to a company to establish or estimate standards of performance, departmental expense allowances, or to make other estimates in budget form if employees and executives cannot be made to realize the desirability of meeting these standards.

The Policyholders' Service Bureau was recently asked to furnish a well-known automobile company with information regarding the practicability of using a bonus as an incentive to department managers and foremen to keep the actual expenses of their departments within the budget.

FUNDAMENTALS TO BE CONSIDERED

Mr. E. ALFRED DAVIES, Budget Supervisor of the Liberty Mutual Insurance Company, points out certain fundamentals which should be considered in the establishment of such an arrangement. He writes in part as follows:

If the budget means what it ought to mean—a complete and comprehensive pre-determined programme for the year—then the confidence in it will be sufficient to justify you in going ahead accordingly. From one's outside viewpoint, it would seem possible to say that, in the past, the labor for each completed unit has been so much, and the quantity of material so much. Presume a budget which totals 5 per cent. less for labor, with material the same; that would be the goal with things as they were, because the budget ought to effect savings. Then, beyond that, if the executives can do better than the budget, half—or some such share—would be theirs as a bonus.

If the business is seasonal, that plan would help to offset rush times against slow seasons, and average out over the twelve months. On the other hand, if the seasonality is ironed out by a production schedule, then actual payment of bonus at shorter periods would encourage the men, and enable them to realize that the effort is worth while. Again, if you predicate the bonus on a budgeted cost, something might come up which will necessitate a revision of the budget, with resulting changes all around. Payments at shorter periods, with fresh announcements if changes are seen to be necessary, would meet the budget revision factor—yet, of course, the changes must not be such as to penalize the men for good work.

The Bonus Is Not an Automatic Addition to Wages

Any bonus plan, once announced, seems to run the risk of acquiring the status of an automatic addition to wages—if the expense savings were not made, for good reasons doubtless, then disappointment might be sufficient to offset much good. There

might be a tendency to blame the lack of savings on bookkeeping methods (such as too much depreciation), or on faulty purchasing, etc. The day-by-day publishing of production results helps in such schemes.

THE BONUS PLAN OF THE OHIO BRASS COMPANY

The Ohio Brass Company has had a bonus plan in effect in conjunction with its budget work for the past five years. It is described briefly by the treasurer of the company as follows:

We have had a bonus plan in effect applying to department heads and foremen as well as traveling salesmen for the past five years, which plan has worked out very satisfactorily. Due to the various divisions of our business it was necessary for us to work out a bonus plan to fit conditions.

We have six different divisions covering different classes of material and the bonus plan is built around

this fact with the idea of stimulating the business in the weaker divisions.

We set a minimum and maximum amount of business for each division, using the difference as a volume range upon which we set aside a certain per cent. which is prorated at the end of the year in the form of a per cent. and applied to the salaries of those participating in the bonus plan.

THE RITTER DENTAL MANUFACTURING COMPANY

The Ritter Dental Manufacturing Company has worked out a bonus plan in connection with its budget of factory overhead which is described, through the courtesy of Mr. BARTZ, Assistant Factory Accountant, as follows:

Budgeting Factory Overhead

The budgeting of factory overhead expense is done to give a closer daily check on this expense—to predetermine as closely as possible what this expense should be.

Overhead is made up of four elements—Indirect Labor, Supplies, Scrap and Fixed Charges. However, fixed charges are not controlled by the various department heads through the plant, so this element is not considered. For the same reason the Experimental Division is also eliminated, and a few other departments.

In connection with this budget work, the bonus plan was inaugurated to secure the best cooperation of foremen and department heads; this bonus being paid to each foreman and department head in a position to control expense, based on the percentage of saving between the budgeted and actual expense for the plant as a whole, each receiving this percentage of salary at the end of the year.

The Use of Standard Allowances

A budget or predetermined expense was set up for each department covering the three elements of controllable expense, namely, Indirect Labor, Supplies and Scrap. Due to the varying conditions throughout the year, such as increases or decreases in schedule, number of working days in the month, etc., it was found necessary to build this budget in a variable manner to take care of such changes. This was done by making out a standard allowance based on certain conditions. Indirect Labor was built up by account number, so as to give better analysis. The first two elements—Indirect Labor and Supplies—were found to have elements some of which were standard and some variable; therefore, each of these divisions was divided up into the standard under the standard division, while those which were variable were put under the variable division.

Scrap in all cases is considered variable.

In all productive departments all fluctuations are based on the fluctuation in productive hours. A predetermined amount of expense was allowed for a basic number of productive hours, and at the end of each month the percentage of increase or decrease from this standard is determined, and all variable elements of the budget extended by this percentage, giving the total variable allowance; which, added to standard allowance, gives the total allowance for the department for the month. The other departments included under the service division were also analyzed for variables and the element on which they varied was determined. The same procedure was then followed in arriving at their monthly allowances.

The daily allowance, as shown on the Daily Budget Analysis Sheet, is arrived at by dividing the total number of working days into the total allowance for the month. This is accumulated from day to day, so that the last day of the month will show the total allowance for the month.

Compilation of Daily Expense Figures

It is not possible to get the non-productive labor tickets through the tabulating department in time for the daily charts, inasmuch as these tickets are often held up by

the time clerks for several days; therefore, it has been found expedient to have the time clerks make up a special report listing all non-productive labor by account number. Having the account number, it is possible to check for errors in charging. Shop and Tool Orders must be charged to the proper departments, and any charges against assets should not, of course, be considered. By using average hourly rates in the various departments, labor charges are figured and accumulated by department. Such items of expense as salaries in office departments, for which no time tickets are sent through, and which can be computed in advance, are listed each month, divided into daily and half daily charges, and these amounts are charged off from day to day.

Supplies

The supply expense is determined from the supply requisitions sent through from the stock room to the supply inventory clerk, who prices the same and passes them on to the tabulating department where they are punched and sorted according to the department charged. These are then tabulated and show the daily supply expense by department. Requisitions for the electric, water and gas bills are received monthly and charged to expense. In order to get the daily average, a predetermined amount is added to the daily expense on the chart to cover this charge when received.

Scrap

The scrap expense is arrived at by pricing out daily the scrap tickets as received from the inspection department. A total of these, by department, is given the budget clerk daily by the cost clerk taking care of this work.

Daily Budget Analysis Report

After these various elements of expense have been accumulated by department, the totals are transferred to the Daily Budget Analysis Form, in the Daily Expense columns, which follow the Daily Allowance columns; and if the daily expense is greater than the daily allowance, it is shown in red. The daily expense is then added to the accumulated expense of the day before, (in the To Date Expense columns), and is also shown in red if the expense is greater than the allowance. The final column on the sheet shows the gains and losses (red for losses). Three copies are made (typewritten); two are used for boards kept in the Factory Accounting and the Production Manager's offices, and one is cut up by division and sent to the foremen and department heads interested.

At the end of the month the allowances are refigured according to actual productive hours worked or any other basis of variation. Against this is entered the actual expense by element and department, taken from reports furnished by the tabulating division and cost department. The total gain or loss for the month, as well as the total gain or loss to date, is then shown both in dollars and cents and by percentage. The total gain or loss to date for all departments and divisions determines the percentage on which

the bonus is to be paid. Three Budget Summary reports are typed for executives, and these show Total Allowance for the Month, Total Expense for the Month, Total Allowance to Date, Total Expense to Date, Gain or Loss for the Month (both in dollars and cents and by percentages), Gain or Loss to Date (in dollars and cents and percentage). A report giving only the last four columns—the gains and losses—is duplicated and sent out to all members participating in the bonus. A meeting is usually held at this time to discuss the gains and losses, and new methods for further reducing the overhead expense.

Mr. BARTZ, Assistant Factory Accountant, commenting on the plan of this company, says:

The establishing of a bonus in connection with the budget has proven to be very essential. The installation of a budget, without an incentive for those who can control the expenses that go to make it up, has the effect of a cure, but experience has taught us the cure is seldom permanent, because the aim of the budget is soon forgotten and then

you have what you might call a relapse. If you provide an incentive in the form of a bonus in connection with the budget, it will have the effect of a preventive, which is far more desirable than a cure, since it seems almost impossible to make the cure permanent.

CLEVELAND METAL PRODUCTS COMPANY

The quotation below is taken from a letter received from Mr. LOWLES, Auditor of the Cleveland Metal Products Company, and is a most specific and interesting description of the bonus plan used by this company in connection with their budget system.

In considering any plan of this kind I think it is well to eliminate at the outset, those managers or executives who are key-men and who comprise the general operating staff. These are preferably dealt with, I believe, on a profit sharing plan rather than on a limited bonus arrangement. We operate here on a budget basis which necessitates the setting of standard expense ratios for each department. In

the manufacturing division we have operated for many years a bonus plan for department heads and foremen, which plan has been quite successful. This plan, however, covers far more than expense, it being our intention that the method of grading or rating these department heads should help in making them better all-round executives, rather than expense watchers exclusively.

Method of Grading and Paying the Bonus

The grading is done monthly by a special committee of three men, based upon a maximum of 1,000 points which is valued at 20% of the individual's salary. That is, if a foreman's salary is \$300, his maximum bonus is 20% of this or \$60.

If the Committee then assign 900 points to such a foreman, his bonus earned would be \$54 or 90% of the maximum.

Bonuses earned are not paid to the department head immediately, but are deposited in individual savings accounts, with a selected trust company to be withdrawn only after the end of the year. Thus

the interest earned adds to the total bonus, and the presentation of the pass-book at the close of the year with a considerable sum on deposit is more effective than the payment of the individual monthly checks would be.

It would be obviously unfair to grade all foremen or department heads alike, that is with the same number of points assigned to each general subject or phase of work. Therefore a special percentage is used for each department head covering the different details of the work under his supervision, but in every case the maximum points are 1,000.

Factors Considered in Paying the Bonus

The different headings used for the subjects covered are:

1. Quality of production.
2. Quantity of production.
3. Cost of operation—covering not only expense of department but labor efficiency.
4. Supervision of labor turnover, lates and absentees, accidents, health and welfare.
5. Care of buildings, equipment and material.
6. General cooperation with other departments and ability to accept responsibility and accuracy of records and reports.
7. Suggestions, including the ability to inspire suggestions from employees.

Thus you will see cost is but one item, the others being emphasized much more in some cases,—such as quality for the chief inspector, and labor turnover, etc., for the labor supervisor.

CONCLUSION

It is apparent from the experiences cited above that not only has the plan of using a bonus in connection with a budget system much to commend it, but that the use of such a plan is entirely practical provided, of course, that the standards of accomplishment are fairly set. As has already been mentioned, bonus payments have been used for some time as an extra incentive for employees doing many various kinds of work, and there seems to be no good reason why its application to the budget field should not be steadily extended.

BUDGETING MANUFACTURING OPERATIONS

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BUDGETING MANUFACTURING OPERATIONS



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METROPOLITAN LIFE INSURANCE COMPANY
HOME OFFICE—NEW YORK
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AN ECONOMIC SERVICE TO BUSINESS

THIS is one of numerous publications issued by the Policyholders Service Bureau in the interest of better management in business. The Metropolitan has good reason for desiring to contribute, so far as practicable, to improved practices in management. Effective management is a vital factor in the continuous and profitable operation of business enterprises and helps to bring about steady work and regular income for Metropolitan policyholders, who number more than one out of five of the general population. A considerably greater proportion than one-fifth of the employees in commerce and industry are insured by the Metropolitan Life Insurance Company. The relationship between prosperous policyholders and the Company's progress is obvious.

Because of its great stake in the Nation's economic life, the Company has set up the Policyholders Service Bureau to carry out a program of economic service to business. The Bureau staff is made up of specialists in the various fields of management—in business organization, office management, accounting and finance; in marketing, distribution, advertising and sales management; in production and personnel management; in business and economic research; in industrial health and accident prevention.

Investigations of subjects of current interest to business executives are continually being carried on by the Bureau's specialists in these various fields of management. Reports of such of these investigations as are of general interest are published from time to time. For additional information about the work of the Bureau or its published reports, address:

POLICYHOLDERS SERVICE BUREAU
METROPOLITAN LIFE INSURANCE COMPANY
ONE MADISON AVENUE, NEW YORK CITY

FOREWORD

A BUDGET SYSTEM has been defined as a systematic method of gathering information from the past and present, of formulating plans for the future on this basis and of reporting subsequently how these plans have been carried out. The application and use of this method of planning and recording give what is called "budgetary control."

Budgets are of many forms and uses. They are considered necessary by many executives since they make possible detailed consideration of the programs of all divisions in the enterprise. They become a check on theories and prejudices and furnish a clearly defined path from which all deviations can be recorded and explained. When properly designed, installed, and recorded, the budget will provide a chart that will assist in eliminating many of the hazards of an unknown future.

The extent to which budgetary control is employed depends upon the purpose to be accomplished and the necessities and abilities of the organization. It is used to correlate the manufacturing program to the sales estimate, to provide a schedule for

the procurement of raw materials, to estimate all labor and expense items, to determine when capital expenditures will be profitable or necessary, to ascertain the financial requirements of the organization for a given period, and to enable the management to construct a plan of operation that will allow the greatest return on the capital invested.

This report has been prepared for the purpose of examining the methods by which industry is employing the budget as an instrument of control over its manufacturing operations. Although the manufacturing department is only one of the major divisions of any company, in most instances the cost of production represents a large percentage of the total cost of operation.

Continuity of manufacturing operations is fundamental to stability of employment for the working force. The planning incidental to budgeting places in the hands of management definite information for outlining the extent of manufacturing operations in advance—a powerful tool for leveling the peaks and valleys of the employment curve.

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BUDGETING MANUFACTURING OPERATIONS

THE KEYNOTE of modern management is control. Budget systems designed to coordinate and control the various functions of the business enterprise have been developed in many organizations. Such systems are based on standards of achievement developed from a thorough knowledge of operating conditions. Effectiveness of control is measured by a comparison of actual results with budgeted performance.

A large part of the total cost of operating a manufacturing establishment is represented in the cost of manufacturing its products. This study outlines fundamental practices of industrial organizations in developing and administering the manufacturing budget, and cites illustrations of the degree of control that has been attained through its use. The information is based on existing practices of representative industrial organizations.

THE MASTER BUDGET

THE BUDGETING of manufacturing operations presents three principal problems:

1. Determination of the amount of each product to be fabricated during the budget period and the size of the most economical manufacturing lot.
2. Establishment of a production schedule to assure the prompt delivery of these products in accordance with the sales requirements.
3. Production of these goods at the lowest cost consistent with the required quality.

The very nature of these problems indicates that the cooperation of other departments is necessary for their solution. Correlation of the several departmental programs necessitates the setting up of a master budget, coordinating the controls over the major divisions and forming the general plan of operation for the budget period. The master budget usually includes the sales budget, the production budget, the financial budget, the

capital expenditures budget, the advertising budget, the research budget, and all the other estimates and budgets required for the complete control of operations.

Sales Forecast

The major consideration in the preparation of a production program is the estimate of goods to be sold during the budget period. Four classes of information are usually considered in the preparation of this estimate:

1. Statistics of past sales.
2. General business and market conditions.
3. Conditions within the particular industry.
4. Plans and policies of the company.

With the sales estimate as a basis, the production program is set up allowing for actual and desired inventory, and with the seasonal fluctuations in the estimate adjusted to attain an even rate of production.

THE BUDGET PERIOD

The length of the budget period is usually the same as the normal business period of the industry in question. Some of the factors on which the selection of a budget period will depend are: availability of statistical records of past performance, availability of reliable indices for estimating future developments, the length of the accounting period, methods of financing, style influence, production methods, time necessary for the completion of a manufacturing cycle, and seasonal market features.

The majority of the companies whose experiences are included in this study use two periods for budgeting purposes—a long period, generally the fiscal year, and a short period ranging from one to three months. The annual budget period is of sufficient length to enable the management to prepare a general plan of operations that will include all seasonal variations, while the monthly or quarterly period is used for detailed control of immediate operations and permits periodic comparison of performance with standards, so that necessary adjustments for future operations can be made when deemed advisable.

Some companies have found it expedient to divide the annual budget period into thirteen

periods of four weeks each. The major advantage of the four-week operating period over the monthly period lies in the fact that each period will be of equal length, permitting direct comparisons of performance without adjustments. For the same reason, other concerns divide the annual budget period into four thirteen-week periods and make the budget comparisons and revisions at the end of this period rather than quarterly.

To provide continuity in the preparation of plans and general policies, some firms prepare their budgets for a constant period in advance of actual operations.

The budget of the Atlantic Refining Company of Philadelphia, for example, is prepared every three months for the following twelve. The advantages of this procedure are outlined by H. G. Hill, Budget Director of this company, in the following paragraph:

Maintaining the individuality of each three months' period in the forecast facilitates the work of estimating, as the more distant quarters can be reviewed and revised instead of being rebuilt. We are also convinced of the value of looking beyond the end of the calendar year, especially as the year end is approached.

PRODUCTION SCHEDULES

The preparation of a budget for the manufacturing department involves two factors:

1. The development of a production program in terms of units to be produced. (This is provided for in a production schedule.)
2. An estimate of the costs that will be incurred in the completion of this program. (This is provided for in budgets for labor, materials, manufacturing overhead, and plant and equipment.)

Manufacturing activities run to two extremes: from manufacturing standard items to stock, to manufacturing special orders to customers' specifications. Many plants operate as a combination of the two classifications. The procedure to be followed in scheduling

and budgeting production will be partly dependent upon the classification within which a company's operations fall.

Production Schedules in Companies Manufacturing to Stock

Production schedules for companies manufacturing to stock usually are divided into two parts—the master schedule and the detailed schedule. The set-up of the master schedule generally consists of establishing a rate of production for each product and determining the inventories of finished goods necessary to meet the sales estimate. The detailed schedules are for the purpose of scheduling the work to individual machines and operating departments.

In preparing a master schedule there are four factors to be taken into consideration: the total estimated sales of all products for a given period, the total manufacturing capacity for producing these products in that period, the rate of demand for the products during the period, and the desired inventory at the end of the period. Unless the cost of carrying finished inventories is too heavy, either in interest charges or possible loss from obsolescence, it is the practice to schedule the manufacturing department at a constant rate of production, building up inventories during periods of subnormal sales. The amount of inventory to be accumulated during the slack seasons should be such that when the sales demand exceeds the production capacity, there will be a sufficient quantity of goods on hand to fill orders until the rate of sales drops to the production level.

Although master schedules are generally prepared for the fiscal year, it is customary to issue the detailed schedules for monthly or quarterly periods. This permits a greater flexibility of control as the production schedules can be adjusted for any variations that occur between actual and estimated sales.

Before a production schedule can be issued, it is necessary to analyze the products to determine their component parts, the raw materials of which these parts are composed, and the various operations and departments in which these parts are fabricated. With the analysis complete, a system of raw material control is set up which will cover the procurement of material and its issue to the productive departments in accordance with the manufacturing program.

The actual preparation of the detailed production schedule begins with the routing and scheduling of every product and its component parts through the factory. Routing involves an analysis to determine the best method of producing the product, an analysis of the productive equipment and the available equipment capacity, the determination of the sequence of operations and the time that will be taken in the manufacture of the product and its parts, and scheduling the

manufacture of parts into sub-assemblies and major assemblies so they will be started in process at such times as will insure their completion simultaneously.

The production schedule is then used in dispatching the work to the various operations in the order of its precedence or importance, controlling the work after the completion of one operation to the next, in accordance with the sequence determined, and recording the time of starting and completing each operation, so that the proper control may be exercised and lagging behind schedule prevented.

Several other important factors are involved in the control of production, such as the standardization of products and processes, the arrangement of equipment to provide for the least amount of travel from operation to operation, and the provision of special equipment that may be necessary.

Preparation and Control of a Manufacturing Program

The production scheduling procedure of the Walworth Company of Boston gives an illustration of a successful attempt to prepare and control a manufacturing program. Prior to the beginning of each new year, an estimate of expected sales for the entire company in terms of tons by product classes is figured on the basis of past performance and the general economic condition of the country. This tonnage is split among the four works and schedule of tonnages submitted to each one of the works managers. Before the beginning of each quarter, sales are reestimated for the succeeding six months. Desirable inventories at the end of the period are established and production schedules authorized. With these master schedules as a guide, each works manager prepares a definite production schedule for the coming month.

At the Boston works this schedule is converted into production totals for the various departments and the requisite man-hours are calculated. Then each department is allotted a definite budget of man-hours which are to

be converted into a given number of tons of product. In setting quotas, every attempt is made to have constant control over work-in-process so that the inventories of such work may be kept at the lowest possible level. The factors by which tonnages are figured in man-hours are the result of several years of careful research. A constant check on output against budgeted quotas has led to profitable economies.

The Boston works uses the following method in figuring help and production quotas and controlling the in-process inventory:

1. On the 15th of each month the planning department, with the approval of the Works Manager, issues a production schedule. This schedule gives only the tonnages by classes that it is desired to have go into finished stock. The schedule contains production figures in each class for the maximum production month, the capacity production year, the actual production, and percentage of schedule for the previous month and the schedule for the present month with the percentage of capacity required.
2. On the 16th of each month the accounting department furnishes the actual inventory figures of all work-in-process by classes, as of the first of the month. At the same time a report of the actual production by classes of each department is made up.

Upon receipt of this information, it is possible to figure the estimated inventory as of the first of the succeeding month and by this means start only such tonnages in the primary departments as will, when processed, equal the standard work-in-process figures. This makes possible, (a) an approximately constant amount of work-in-process, (b) the securing of a cost which has not been affected by a fluctuating work-in-process.

3. Having received the schedule, it is first necessary to break it down and determine how much tonnage of each class of goods will go through each department. To do this, a chart has been set up giving factors to apply to finished stock tonnages. The tonnages in the foundries and forge shops are adjusted to give the desired work-in-process inventory referred to above.

4. With the tonnages of each class for each department thus determined, this figure is multiplied by the number of hours it takes each department to produce a ton of each class of goods. The number of hours per ton has been

determined through experiment. A deduction is made to allow for expected progress once a year when these hours are revised. The figure stays intact for the ensuing year.

5. The number of hours having been determined, this figure is divided by the number of hours in the month that each department will work. This gives the number of men needed, not including absentees. A percentage allowance is added to take care of absentees.
6. By dividing the total tonnage to be produced by the number of working hours in the month, the production desired per working hour is secured. This is then multiplied by the number of hours in the day to get the daily tonnage quotas.
7. All of this information is sent to the executives on the Production and Help Quota Form. The daily quota is put on the Production Quota Form, one copy is given to the foreman and one is kept in the general superintendent's office.
8. Daily, the foremen report the tonnage produced and the total for the month to date on the Daily Tonnage Report. By this it is possible to tell daily just how production is progressing.
9. Daily, each foreman reports to the employment department the number of people working and absent. This information is correlated by the employment department and forwarded to the executives on the Daily Force Report.
10. Monthly, the accounting department makes up the Departmental Expense Analysis. This gives complete information as to the quotas and hours assigned and actually used, together with the expense per ton.

The foregoing method of arriving at help and production quotas and controlling the in-process inventory accomplishes the following objectives:

1. A forecast of the production to be turned out and the number of workers required.
2. A monthly check on actual results and a direct comparison with other months.
3. A check on each day's accomplishment, affording a means of maintaining scheduled performance.

Production at a Constant Rate

The successful planing of production at a constant rate is illustrated in the production control procedure of Eli Lilly and Company of Indianapolis. The production of the fac-

tory and the shipment of merchandise to the principal branch houses of this company are planned in order that the following objectives may be obtained:

1. Maintenance of an even rate of production per working day with due allowance for reduction in capacity during the summer vacation months.
2. Maintenance of an even rate of shipment from the factory per working day by varying shipments to branches in inverse proportion to the seasonal variations in the demands of other customers.
3. Maintenance of adequate stock at all times and at all distribution points to render proper service to customers.

Factory production is budgeted by setting production quotas, in units of product, for each of the manufacturing departments. These quotas are determined in the following manner: The sales for any twelve-month period are estimated to be the sales for the twelve-month period just closed, plus or minus the trend as indicated by a comparison of the twelve-month period just closed with the twelve-month period that closed one month previously. The production during the balance of the year must be the number of units which, when added to the present stock, will permit sales equal to the estimate and leave a carefully determined stock on hand at the end of the year. The number of units to be produced during the current month will bear the same relation to the total production required for the balance of the year as the number of working days in the current month bears to the number of working days in the balance of the year. The final quota is the figure so determined plus a percentage adjustment during non-vacation months and minus a percentage adjustment during vacation months. The planning department supervision attains these production quotas with practically no deviation.

Special Order Production Scheduling

Production scheduling for those companies whose products are manufactured to customers' specifications is generally confined to the preparation and issue of detailed

schedules and dispatching the work after actual sales orders have been received. The procedure followed in the preparation of the schedules and the routing of orders is very similar to that employed by companies manufacturing to stock.

The Sivyer Steel Casting Company of Milwaukee has been able to deliver an unusually high percentage of orders on the dates scheduled by keeping a close control of orders and materials-in-process. This company maintains a jobbing foundry, and control is obtained by issuance of forms and records at strategic points which are supplemented by organized personal attention of the production department or supervisory force.

New orders are entered on an order recapitulation form in duplicate, one section being a recapitulation of the information given in the order, the other section being used for entering information relative to cores needed. Upon receipt of an order, careful check is made of previous orders for the same patterns. Quotations are checked, questions of analyses are settled, and delivery promises entered for shop information.

From the order recapitulation, a work order consisting of four copies is issued for each pattern. One copy is sent to the shipping department, one to the pricing department and two to the pattern storage. The form sent to the shipping department provides space for dates, pieces made, pieces shipped, defectives and delivery dates scheduled. The shop cards provide space for specific instructions needed to put the job in process and to show a record of work performed.

A core order is made from the core recapitulation copy of the order recapitulation form. This is sent to the core department with the core boxes at least two days before the molders get their work orders. This time allowance for the core department is considered ample for the preparation of the cores.

Shop orders, upon leaving the office, are sent directly to the pattern storage and all pattern equipment required is laid out on a bench for inspection. The pattern equipment which is to be used is studied carefully

and examined by the shop executives. Accompanying each old pattern are records of any difficulties reported on previous orders either by the customer or the foundry. Unusual loss through defectives is also given consideration at this time.

Each morning all approved orders received at the pattern storage on the previous day are given to the schedule clerk. The foreman of each molding department is called in and the jobs discussed and molders assigned. Dates on which shop work will begin are set according to work ahead. Then the work orders are filed on a schedule board in accordance with the dates which have been designated. The molding foreman is held responsible for fulfillment of molding schedules according to orders assigned to individual units, and he makes the necessary arrangements for delivery of complete equipment to the molders. A day-by-day record of schedule efficiency is kept.

After a job is definitely scheduled, one copy of the work order is sent to the office. From the date recorded thereon a shipping date is determined and the customer is notified when shipment will be made. This copy of the order is the production department's delivery control record. Both molding and shipping dates are recorded on it and it is used daily in checking progress of orders so as to insure movement in process and shipment as promised.

Each day a production meeting is held at which molding and shipping of scheduled orders are discussed and current and overdue promises, both of the molding and finishing departments, are given particular consideration. The primary purpose of this meeting is to discover the causes for delay and rectify them before they have been in effect long enough to check production seriously and result in dissatisfaction through failure to keep delivery promises.

Manufacturing Standard Items to Customers' Orders

Between the extremes of manufacturing standard items to stock and the production

of special orders lies the manufacturing of standard items to customers' orders. This procedure is usually followed when the products represent a large investment of capital and when the sales of each item during a year are numerically few. This situation is generally found in plants manufacturing large heavy duty machinery.

An example of an effective production control system in this field of manufacture can be illustrated in the procedure employed by the Chambersburg Engineering Company, Chambersburg, Pennsylvania. Shop orders are initiated by the order department upon receipt of a sales order. Four copies of the shop order are issued, one each for the design department, the planning department, the stores department, and the accounting department.

The design department issues a parts list, or bill of materials, together with the drawings, drawing list and specifications covering that order, these being sent to the planning department. A copy of the parts list is also forwarded to the accounting department.

Upon receipt of the shop order, the planning department consults its file of standard operation cards. These are, in effect, combination route and schedule cards for each separate component of each machine made by the company. The data on each card are arranged according to sequence of operations and include the overhead expense symbol for each machine.

From these operation cards, the planning department is able to reduce the work represented by the order to time, and thus prepare a schedule. Starting with the delivery promise and working backwards, dates are assigned for the production of each part of the machine on order. With this are specified the dates that raw material and finished parts must be on hand for the work in the shops and in the erecting department. With the latter schedule in front of him, the purchasing agent arranges for the delivery of materials.

The above production planning is done on a control board consisting of a continuous sheet resembling a Gantt chart, mounted on

rollers. The chart is carried on a frame at the left of which is listed vertically all the machine tool and other production equipment in the plant, singly or in groups. Horizontal lines represent time. Light horizontal lines indicate the number of hours required to perform the given operation assigned to each unit of equipment. Progress of the work is checked daily, and the availability of machine tools and other equipment for subsequent orders is readily predicted.

In the meantime the planning department has prepared work tickets covering each operation on each part to be produced. These tickets are made out in triplicate, the original copy being the operator's instructions to work on the given part, the second is forwarded to the accounting department, and the third is retained in the planning department

to indicate the issued tickets. The reverse side of the original is ruled so that the operator may record the time spent on the operation covered by the work ticket.

With these tickets the accounting department has a complete cost history of every sales order, including direct material, direct labor and burden. It will thus be seen that the records forming part of the routine production control serve both cost department analysis purposes and production control. Costs of each machine in process are compared carefully with historical costs of the same or similar work.

When the work on all parts of a machine built to a given order has been completed, the work tickets are collected and filed together, forming a permanent record of the building of that machine.

MATERIALS BUDGETS

While the control of raw material is essentially a part of the production planning procedure, it is customary to develop a materials budget as a method of controlling the purchases of raw material. This materials budget is based on information taken from the production schedule and consists of two parts, (1) the estimate of raw material requirements necessary for the manufacture of the goods outlined on the production schedules and, (2) a schedule of purchases, in terms of quantities and time, so that the raw materials will be on hand and ready for use in the manufacturing department when called for. The quantities listed on the estimate of raw materials and those on the schedule of purchases may vary in order that the purchasing department can procure the materials in even lots and at best market prices.

Classification of Materials

Although the majority of plants use two classifications for materials, direct and indirect, additional classifications have been found necessary in some instances. One company, manufacturing writing fluids, has found it advisable to use three classifications—raw

materials, indirect materials and supplies. Raw materials include those basic ingredients used in the manufacture of the fluid, indirect materials comprise materials actually used in the "put up" of the product but too small to be handled on a requisition basis, and supplies are composed of those materials which are bought to facilitate the manufacture of the product but which do not actually enter into it.

This classification of materials is also used by a company manufacturing heating equipment. Indirect material is considered as overhead for accounting purposes but is included with the direct material requirements in the materials budget. Miscellaneous supplies, however, are not included in the materials budget but appear as an item of manufacturing expense.

Methods of Estimating Material Requirements

The methods employed in estimating raw material requirements are dependent to some extent on the degree of standardization to which the products of the company have

[illegible]

FIGURE I—Typical Balance-of-Stores Record

been subjected. For example, some organizations have been able to analyze their products to such a degree that the exact raw material requirements for each unit produced have been definitely established. In such cases, it is customary to have a standard material requirements list for each product showing the amount of raw materials used in the production of the product and its component parts. When the production schedule has been established, the amount of material necessary for the fulfilment of this program can be determined from the material requirements records.

Such procedure is followed by a company fabricating motor accessories. The planning department of this company has established a control system covering purchases of all raw materials and finished parts used in the assembly of their products. All parts have a standard specification developed by the standards or engineering department. Inventory reduction and control are accomplished by purchasing on a set maximum and minimum basis. Parts for standard units are stocked on a maximum and minimum monthly requirement based on previous experience. Small standard parts such as rivets, lock washers, nuts and bolts are purchased in larger quantities in order to take advantage of the best

price. Special parts required for specific orders are purchased in a quantity sufficient to cover the customer's order plus some small amount for shrinkage.

In many industries the raw material content of products changes from year to year. In such instances, the development of standard requirements records may involve too much detail to be practical. Some companies, especially those using only one or two basic raw materials, have been able to set up ratios between the volume of sales and the basic raw material requirements, and have prepared their materials budget on this basis. Foundries and steel mills have found this simple procedure very effective in controlling material purchases.

The Taylor-Wharton Iron and Steel Company of High Bridge, New Jersey, budget their one large item of direct material on the basis of the anticipated production for each month. They have developed a ratio between the production, in tons of good steel castings, and the total number of tons of pig iron, scrap, etc., that will be necessary for this production. For example, if the estimated production called for was 840 tons of castings, the materials budget would call for 1,200 tons of raw material.

The schedule of material purchases can

be controlled effectively by the use of balance-of-stores records. (Figure 1 illustrates a typical balance-of-stores record.) This procedure involves the use of an inventory record of each item of raw material used, showing at any time the balance at hand, amounts received and issued, amounts reserved for production orders issued but not called for, the reorder point, and the quantity to order. The reorder point and the quantity to order will depend upon the interval of time between the issue of a purchase order and the date that the material will be in the plant ready to use, the rate of consumption of raw materials, as shown in the production schedule, and the desirable reserve that should be on hand to take care of delays in delivery of raw materials.

The purchase of raw materials should not, however, be an entirely automatic procedure. The reorder point and the quantity-to-order amount should be frequently examined so that changes in the production or raw material requirements, as made by the planning or engineering departments, will not be overlooked by the purchasing department.

Indirect materials (those materials and supplies which do not form a part of the finished product) are generally included in the manufacturing expense budget, due to the

fact that the amounts of these materials used do not necessarily vary directly with the volume of production. Generally, it is considered advisable, however, to control the purchases of these materials in a manner similar to that used for control of raw materials.

Control of the Materials Budget

The materials budget generally consists of two parts, the estimate of raw material requirements and a schedule of purchases. The control of the first part is a function of the planning division of the manufacturing department. The control of the second is a function of the purchasing department. If this department comes under the jurisdiction of the production executive, the materials budget is considered a part of the production budget and the responsibility for its administration belongs to the production executive. If, on the other hand, the purchasing department is independent of the manufacturing department, the schedule of purchases becomes a separate unit in the master budget, and the responsibility for its administration lies with the purchasing executive. In either case, however, it is considered advisable to secure the approval of the production executive before this estimate is formally adopted.

THE LABOR BUDGET

Classification of Labor

There are two classifications of labor used in manufacturing establishments—direct and indirect. Direct labor is that effort which is used directly in the manufacture of the finished product, and indirect labor is that effort which is used to facilitate the manufacture of the product. Although for cost accounting purposes indirect labor is generally included as a manufacturing expense item, many companies have found it advisable to include indirect labor in the labor budget. This practice is followed by the company manufacturing heating equipment,

referred to in the section on "Materials Budgets." Their practice is to segregate indirect labor as an overhead expense on the company's records, but for budget purposes it is included with direct labor.

To provide the most adequate control, direct labor budgets are prepared in terms of cost for the payroll and financial departments and in terms of men, man-hours or machine-hours for the use of the production department. Indirect labor usually is budgeted simply in terms of cost and men, with the exception of some maintenance departments in which it has been possible to make a further analysis in terms of man-hours.

Estimation of Labor Costs and Labor Requirements

The method to be employed in estimating labor costs is dependent upon cost accounting practices of a company and the methods of wage payment in use. Companies having incentive systems for all direct labor operations use the incentive rates for the calculation of labor costs and the determination of the number of man- or machine-hours necessary for the fulfillment of the production program. This calculation consists of multiplying the standard time allowance and rate for each operation by the number of times that the operation is to be performed during the budget period. The classes of labor necessary for the completion of the manufacturing program can be determined also by the use of the incentive data.

Many companies have found it impracticable to put all the direct labor operations on an incentive basis, day or hourly rates being considered expedient or necessary on a portion of the work. The preparation of labor estimates under these conditions is generally undertaken by the foremen or factory managers. These executives are given a schedule of the work to be performed in their departments and, based on past operating information, they estimate the amount of each class of labor that will be necessary for the completion of the production program.

It is advisable to furnish either the personnel department or the works manager with a copy of the estimates of labor requirements so that the necessary amounts of all classes of labor will be available when needed. When the schedule does not call for a constant rate of production, the personnel department is able to plan so that employees may be shifted from department to department according to their needs and the qualifications of the employees. This flexibility of labor aids in reducing labor turnover and the cost incident to the training of new employees.

This practice is followed by a Pacific Coast public utility company in budgeting their labor requirements. The system operated by this company requires each super-

visor to plan for twelve months in advance how many men he will require for each month of the following twelve. This planning is done monthly and previous estimates are changed when necessary. The estimates call for a number of men by occupation—not merely a lump number—and are submitted to the head of the department which takes care of all of the operating employees. These estimates are tabulated by divisions and by the department as a whole. This allows the operation of an exchange of employees to all divisions through this office. The tabulated figures show when one division will have a surplus or when it will need help of a definite kind. By comparison it is possible to avoid, to some extent, peaks and depressions in the number of employees by shifting them from one division to another. It also shows the supervisors just how evenly they are spreading out their work over a year, as each supervisor makes up a labor budget from his plan of operation.

Planning the labor budget in terms of cost is necessary for two reasons: determination of the necessary cash requirements to provide for payroll disbursements, usually one of the largest items of manufacturing cost, and predetermination of manufacturing costs and the consequent estimates of profit or loss. The breakdown of labor requirements in terms of cash may be made by either the payroll or personnel department, but it should be done prior to the start of the budget period.

Although indirect labor is generally considered as an item of overhead expense for accounting purposes, it is well to include estimates for this type of labor in the labor budget. The heads of the various service departments and those production departments having clerks, truckers, inspectors, etc., assigned to them can prepare an estimate of the amounts and classes of labor necessary for the completion of the production schedule. These estimates are based on the experience gained from past operations modified with any estimates of salary increases that will be made during the period. Schedules of indirect labor expense should be furnished the

payroll and personnel departments, together with those for direct labor.

The preparation of labor budgets, in companies manufacturing to customers' orders, is illustrated in the procedure followed by the Newport News Shipbuilding and Dry Dock Company. The labor budgets of this company are prepared and issued as soon as practicable after an order for the construction or repair of a vessel is received, and are based upon the best information available. The purpose of this budget is to allow the preparation of labor requirements and piece-

work contracts. The budgets are based on the estimated labor which goes to make up the contract price.

Labor budgets are revised by this company for the following causes: addition or omission of work resulting from changes under the contract, changes in yard organization, changes in the routine of work from one department to another, and improvement in facilities. Budgets may be adjusted between departments on the written recommendation of a superintendent, giving his reasons therefor, provided the total is not affected.

THE MANUFACTURING EXPENSE BUDGET

The manufacturing expense budget, as well as providing the financial department with an estimate of the expenses incident to the operation of a factory, provides an effective method of controlling departmental expenses. Companies whose products are manufactured to customers' specifications, and which do not operate an all-inclusive budget, have found that the manufacturing expense budget offers a satisfactory method of controlling operating expenses. In organizations of this type it is difficult, if not impracticable, to forecast sales and prepare estimates of labor and material requirements. Manufacturing expenses, however, can be determined with a fair degree of accuracy from a study of past operation records, and budgets based on these figures will provide a cost control for this important factor in plant operations.

Many organizations manufacturing to stock find it difficult to make sales estimates and to budget labor and material, due to the influence of rapid style changes. Here again, the manufacturing expense budget affords a method for controlling departmental expenses incurred in the manufacturing processes. The manufacturing expense budget has been used effectively by several companies as the starting point for the installation of a complete system of budgetary control.

There are two methods in general use for the preparation of manufacturing expense

budgets. One is through the use of predetermined or standard burden rates, and the other by the preparation of estimates of actual expense, by accounts, to be incurred in the budget period.

Relation of Standard Costs to Budgeting

It will be well at this point to discuss briefly the relation of standard costs to budget making. Both procedures are concerned with making estimates of costs and establishing the allowances of money, labor, and material that will be necessary for the completion of a given program. Allowances under a system of standard costs usually are expressed in terms of dollars per unit of product or per operation, while budget standards are the overall departmental allowances for a given volume of production.

It is evident that standard costs can be used advantageously in the preparation of a budget. The standard cost of a product is that cost which is based on definite specifications with a fixed allowance, expressed in terms of dollars, for labor, material and overhead, these allowances being determined from average or normal operating conditions.

The standards for material are determined from an analysis of all the raw materials entering into the product. The material cost allowance is a predetermined fixed price based on market conditions. Temporary

market changes do not affect material standards, as raw material inventories are held at cost and any plus or minus variation from the standard material cost is absorbed in a material variation account.

The preparation of a materials budget, where standard costs are in use, becomes a relatively simple matter. With the volume of production determined from the production schedule, the total amount of each product to be fabricated is multiplied by its material standard and the amount of material and its allowable cost is determined. The material standards should be examined at this time to make sure that there has been no definite change in market conditions; if there has been a definite change, the standards should be revised accordingly. If a definite change in material prices occurs during the budget period, the standards should be revised at that time and a revision made in the materials budget to allow for this price change.

The standard allowance for direct labor cost is the piece rate per unit of product based on scientific job analyses made for each labor operation. Variations in labor cost, due to the use of hourly rates, or task and bonus systems, can be handled through a labor variation account. Variations due to overtime excess or to the training of new employees are handled through separate accounts for this purpose. The overtime excess account and the breaking-in-labor account can be used effectively in measuring the efficiency of the operating department.

The preparation of a direct labor budget where standard costs are used is similar to the preparation of the materials budget. The labor budget standard is the result of multiplying the labor standard allowances for each product by the number of units to be manufactured during the budget period. However, as in the case of the standard materials cost and the materials budget, if basic wage rates are changed to meet the requirements of the labor market, the standard labor costs should be changed and a revision of the labor budget made. Changes in processes and methods of manufacture will also

affect the labor cost and may necessitate revision of labor standards and the labor budget.

The Manufacturing Expense Budget and Standard Costs

The preparation of the manufacturing expense budget, based on standard costs of manufacturing expense, is not so simple an operation as the preparation of the labor and material budgets. Overhead, unlike direct material and labor, does not vary directly with the volume of production. Therefore, when standard burden rates are used in the preparation of an expense budget, these rates being based on a normal or average volume of production and for a normal operating period, the resulting budget will set standards of accomplishment for a normal period. If the budget forecast shows an abnormal condition, the standards set by the expense budget will more than absorb the actual cost incurred. If, however, the budget forecast predicts a subnormal condition, the standards will not absorb the actual manufacturing expense incurred. In other words, for control purposes, it seems more logical to prepare the manufacturing expense budget in terms of the conditions to be expected during the period under consideration, rather than normal conditions.

Many companies, however, have established burden rates in such a manner that they may be adjusted to various production volume levels, thus permitting the preparation of a manufacturing expense budget which will set adequate standards for the period in question. Some of the methods used for adjusting burden rates to the production volume level are as follows: rate of variability, whereby coefficients or percentage adjustments are set up for different volumes; estimates of overhead expense for the budget period in question translated into standard burden rates for that period; or charts on which curves are plotted showing the relation between the various expense accounts and the volume of production.

While standard costs are used extensively

in the preparation of labor and material budgets, the majority of the companies included in this study use departmental estimates of expense in the preparation of the manufacturing expense budget. Many of the companies also translate these departmental estimates into standard burden rates for the budget period.

Preparation of Manufacturing Expense Budgets

Manufacturing expense budgets are usually prepared in two forms, one for each of the productive departments and one for general plant expense. Many companies prepare additional expense budgets for the service departments, incorporating in the general plant expense budget only those items that cannot be directly allocated to any department. The following paragraphs illustrate the manufacturing expense budgets of C. G. Conn, Ltd., of Elkhart, Indiana, and the methods employed in their preparation.

The manufacturing departments are analyzed as to the amount of expense incurred during the past year. The expense groups of the company are as follows:

Supervision	Spoilage Labor
Inspection	Supplies
General Labor	Reclamation Material
Overtime Excess	Tool Repair Material
Reclamation Labor	Machine Repair Material
Tool Repair Labor	Equipment Repair Material
Machine Repair Labor	Spoiled Material
Equipment Labor	

From the analysis of these accounts an average expense per accounting period is computed and placed on a form (Figure 2, page 18) called an expense schedule. The expense schedule is sent out to the foremen who place on it their best estimate of the cost necessary for the operations of their department for the next period. This expense schedule is returned to the cost department and reviewed item for item by the factory manager, the superintendent, the cost accountant and the foreman of the department in question. In a conference of these four executives, all contemplated changes during

the next budget period are considered and a standard expense schedule is set up which is to stand intact for the budget period. These schedules are then written on a form (Figure 3, page 19) prepared for this purpose. Five copies are made, one for each of the following: foreman, superintendent, factory manager, general manager of manufacturing, and cost accountant.

The general factory expenses of this company are prepared in a similar manner and on a standard expense schedule. The accounts and their sources of information are shown in Figure 4 (page 20).

These various manufacturing expenses and the general factory expense items constitute the total manufacturing expense.

The cost analysis division of the cost department of this company has built up a standard cost for each item of product. This standard is based on the piece-work rates and the material used. The standards are being revised constantly to meet changing methods and rates in use in the manufacturing department. This gives at all times the latest standard cost of products manufactured.

The standard burden rate used by this company is calculated in the following manner. The productive labor estimated for the year is totaled. The estimated manufacturing expense for each department is added to the general factory expense for the year, resulting in an estimate of total factory overhead for the year. This total, divided by the total productive labor for the year, gives the amount of overhead per dollar of productive labor. The percentage thus determined is the burden rate for the year and is used in preparing the standard costs.

A record of the products transferred from the manufacturing division to the finished stock room is kept, divided into the cost of labor, material, and overhead. From this record, the percentage of material and labor to the total cost is determined for each budget group of product. An excellent control over departmental expense is assured through the schedules and the conferences incident to their analysis.

STANDARD EXPENSE SCHEDULE

ACCT. No.	DESCRIPTION	AVERAGE ACTUAL LAST YEAR	NUMBER	HOURS	RATE	STANDARD AMOUNT	
						PER PERIOD	PER WEEK
	PRODUCTIVE LABOR						
1	Supervision						
2	Inspection						
3	General Labor						
4	Overtime						
5	Reclamation Labor						
7	Tool Repair Labor						
8	Machine Repair Labor						
9	Equipment Repair Labor						
10	Spoilage Labor						
	TOTAL LABOR						
51	Supplies						
55	Reclamation Material						
57	Tool Repair Material						
58	Machine Repair Material						
59	Equipment Repair Material						
60	Spoilt Material						
	TOTAL MATERIAL						
	GRAND TOTAL						
	Fixed						
	Fluctuating						
	GRAND TOTAL						

FIGURE 2—Schedule for Estimating Departmental Expense

STANDARD EXPENSE SCHEDULE

PERIOD	ACCOUNT NUMBER	DESCRIPTION	HOURS IN STANDARD MONTH	TOTAL MFG. COST			
				RATE		STANDARD AMOUNT	
				AMOUNT PER HOUR	PER PERIOD	PER WEEK	
		PRODUCTIVE LABOR					
1		Supervision					
2		Inspection					
3		General Labor					
4		Overtime					
5		Reclamation Labor					
7		Tool Repair Labor					
8		Machine Repair Labor					
9		Equipment Repair Labor					
10		Spoilage Labor					
		TOTAL LABOR					
51		Supplies					
55		Reclamation Material					
57		Tool Repair Material					
58		Machine Repair Material					
59		Equipment Repair Material					
60		Spoilt Material					
		TOTAL MATERIAL					
		GRAND TOTAL					
		Fixed					
		Fluctuating					
		GRAND TOTAL					

FIGURE 3—Standard Expense Schedule and Departmental Budget

ACCOUNT NAME	SOURCE OF INFORMATION
Supervision	General Manager of Manufacturing
Inspection	General Manager of Manufacturing
Spoilage	Cost Department Records
Payroll Department Salaries	Cost Department Records
Employment Department Salaries	Cost Department Records
Factory Office	Production Manager
Shop Clerks	Cost Department Records
Freight Hauling	Cost Department Records
Stockkeeping	Cost Department Records
Inventory Expense	Chief Stockkeeper
Free Repairs—Labor	Cost Department Records
Repairs to Returns—Labor	Cost Department Records
Suggestion Committee	Cost Department Records
Cost Department Salaries	Cost Department Records
New Tools—Labor	Cost Department Records
Factory Stationery	Chief Engineer
Scrap Material	Production Manager and Cost Department
Free Repairs—Material	Cost Department Records
Repairs to Returns—Material	Cost Department Records
Taxes—Inventory	Cost Department Records
Miscellaneous Manufacturing Expense	Cost Dept. Records and General Manager of Mfg.
New Tools—Material	Chief Engineer
Factory Traveling Expense	General Manager of Manufacturing
Reclamation—Labor	Cost Department Records and Superintendent
Testing of Finished Product	Cost Department Records
Supplies	Cost Department Records
Reclamation—Material	Cost Department Records
Building Repairs—Labor	Cost Department Records and Maintenance Eng'r
Sweepers and Watchmen	Cost Department Records and Maintenance Eng'r
Firemen	Cost Department Records and Maintenance Eng'r
Building Equipment Repairs—Labor	Cost Department Records and Maintenance Eng'r
Taxes—Real Estate	Cost Department Records
Coal	Cost Department Records
Building Operation Supplies	Cost Department Records
Building Repairs—Material	Cost Department Records and Maintenance Eng'r
Depreciation	Cost Department Records
Building Equipment Repairs—Material	Cost Department Records and Maintenance Eng'r
Machine Repair—Labor	Cost Department Records and Maintenance Eng'r
Equipment Repair—Labor	Cost Department Records and Maintenance Eng'r
Truck Supplies	Cost Department Records
Machine Repairs—Material	Cost Department Records and Maintenance Eng'r
Equipment Repairs—Material	Cost Department Records and Maintenance Eng'r
Taxes—Machinery	Cost Department Records
Depreciation—Machinery	Cost Department Records
Depreciation—Equipment	Cost Department Records
Taxes—Equipment	Cost Department Records
Engineering Salaries	Cost Department Records
Engineering Supplies	Chief Engineer
Gas	Chief Engineer
Electricity	Cost Department Records
Experimental Labor	Experimental Engineer and Cost Department
Experimental Materials	Experimental Engineer and Cost Department
Shipping Expense	Cost Department Records
Shipping—Miscellaneous	Cost Department Records
Shipping Supplies	Cost Department Records

FIGURE 4—Schedule of General Factory Expense Accounts

Budgeting Overhead in a Company Manufacturing to Customers' Specifications

The budget of overhead expense used by the Doehler Die Casting Company of New York is illustrative of the manner by which these expenses can be controlled in a company whose products are manufactured to customers' specifications. It also illustrates the use of standard burden rates adjusted on a sliding scale for varying volumes of production.

The business of this company is greatly affected by periodic fluctuations in each of the principal products manufactured, due to such causes as new models, new inventions, seasonal variations, business depressions and the fact that no two customers use the same products. For these reasons, only the overhead expenses of the various manufacturing departments are budgeted.

The budget is based on the expected production but is adjusted to actual production, and a monthly comparison of actual expenses with the adjusted budget is made up and given to the plant managers with the comments of the General Manager. The basic budget is adjusted through the use of rates of variability which have been assigned to each item of expense.

The amount of adjustment of each item in the budget is found by multiplying the rate of variability by the percentage increase or decrease in actual production above or below the estimated production. The comparison is made at the end of each month and each individual item of expense is compared with the budget allowance of that item after adjustment. The average rate of variability for the two major groups of expense, non-productive labor and supplies, is also calculated for each department, these rates being used by each plant in adjusting their basic budget each week for immediate comparison with and control of actual expense.

An example of this procedure is given in Figure 5 on the following page. The figures given in the illustration are fictitious but

they will serve to illustrate the procedure in use. The budget has been set up for a monthly production of 4,000 hours, which was the average production expected during the year. In January, the actual production was 6,000 hours, or an increase of 50 per cent. above the expected production. Therefore, the expenses which increased in direct ratio to production (those marked 100 per cent. variability) are expected to increase 50 per cent. over the original budget. The other items are not expected to increase in direct ratio to production, but only to the extent of the rate of variability shown.

For example, the item of compressor expense shows a variability factor of 20, and it is expected, therefore, that this item of expense will only increase 20 per cent. of 50 per cent. or 10 per cent. The items of depreciation, insurance and taxes, have a zero rate of variability and, therefore, remain fixed regardless of the volume of production.

In February, the example shows that the actual production was 3,000 hours, or 25 per cent. below the expected production. The items with a rate of 100 per cent. variability show a decrease of 25 per cent. from the original budget. However, the item of power, for example, shows a rate of variability of 50 per cent. and it is expected that the power cost will drop only 50 per cent. of 25 per cent. or 12.5 per cent.

The rate of \$1.30 per hour is the standard burden rate for the department illustrated and for the year under consideration. The differences between the adjusted budget and the absorbed burden (actual hours multiplied by \$1.30) are transferred to a Reserve for Unabsorbed Burden Account, since they represent losses and gains due to actual production being less or greater than the budgeted production. Debits accumulating in this account during months when actual production is less than budgeted are expected to be offset by credits during months when it exceeds the budget. Differences between the actual expenses and the adjusted budget are taken into the operating results for the month, since they are the difference between

METROPOLITAN LIFE INSURANCE COMPANY

DEPARTMENT FOREMAN	EXPENSE ANALYSIS YEAR										12 MONTHS TOTAL	MONTHLY AVERAGE
	EXPENSE ACCOUNTS	ESTIMATED BASIS	% VARI- ABILITY	% TO TOTAL	JANUARY	FEBRUARY	MAR-	APRIL	MAY	JUNE		
	Non-Prod. Wages											
	Foreman	433	-		433	433						
	Supervisors	400	80		560	320						
	Die Maintenance	1250	100		1875	938						
	Equipment Maintenance	417	85		594	328						
	Clerk	125	50		156	109						
	Dismount & Reset for Repairs	175	100		263	131						
	Total Non-Prod. Wages	2800	77.2		3681	2259						
	Rate per Hour	70¢			64.7¢	75.3¢						
	Supplies											
	Die Maintenance Supplies	25	100		38	19						
	Equip.	325	85		443	256						
	Pots	250	100		375	188						
	Goggles	400	100		600	300						
	Gloves	100	100		150	75						
	Nozzles	100	100		150	75						
	Total Supplies	1200	95.9		1776	913						
	Rate per Hour	30¢			29.6¢	30.4¢						
	Shares											
	Power	110	50		138	96						
	Compressor	490	20		539	466						
	Total Shares	600	25.5		677	562						
	Rate per Hour	15¢			11.3¢	18.7¢						
	Fixed Charges											
	Depreciation	534			534	534						
	Insurance	11			11	11						
	Tax	55			55	55						
	Total Fixed Charges	600			600	600						
	Rate per Hour	15¢			10¢	20¢						
	Grand Total	5200	66.7		6934	4334						
	Productive Hour	4000			6000	3000						
	Rate per Hour	\$1.30			\$1.15¢	\$1.44¢						
	Variance in Production				Inc. 50%	Dec. 25%						

FIGURE 5—Expense Analysis and Budget Comparison

what the expenses actually were and what they should have been.

The average rate of variability for non-productive wages is 77.2 and for supplies 95.9. By means of these rates the factory accountants calculate weekly the adjusted budget for these two groups of expenses in total only for comparison in their weekly summary of expense. The factory executives also have copies of the original budget showing the rates of variability so that at any time they may calculate the allowances for any particular item of expense for the production scheduled for the following day or week.

At the end of each month, a detailed report is made up showing how the actual expenses compared with the adjusted budget on each item of expense.

Other Forms of Manufacturing Expense Budgets

Graphic charts showing the relationship between expenses and production volume are used by the Norton Company of Worcester, Massachusetts, in their system of budgetary control. The procedure of this company will be explained more fully in the section devoted to comparison of actual and budgeted accomplishment.

The American Writing Paper Company of Holyoke, Massachusetts, has established burden rates which vary with the volume of production. The various items of burden expense are compared with standards which are termed "bogies." These bogies have been worked out through experience and vary with production, with the exception of

BUDGETING MANUFACTURING OPERATIONS

such relatively fixed items as taxes, insurance and depreciation.

The service departments of Eli Lilly & Company such as boiler and engine room, machine shop, laundry and hospital, are bud-

geted directly and their expense compared monthly with their budget. In preparing budgets for these departments of indirect expense, estimates are made for labor, salaries, supplies, fixed and prorated charges.

METHODS OF CONTROL FOR PLANT AND EQUIPMENT EXPENDITURES

Although the control of capital expenditures for plant and equipment is a function of the general management of an organization, the necessity for these expenditures is largely dependent upon the production program. In planning for the enlargement of production facilities, it is usually necessary to plan for a longer period of time than that included in the budget period.

In deciding to purchase or lease additional plant and equipment facilities, the executives of a manufacturing enterprise will be largely concerned with one question: "Will the probable return on the investment be sufficient to justify the expenditure?" It is necessary to form some estimate as to the volume of production and the probability of profitably using the equipment over a period of years. The volume of business over that period should be sufficient to indicate that the proposed equipment will have a productive use throughout its normal life, and that the savings incurred through the use of the equipment, assuming that it is for replacement purposes, will allow the machine to pay for itself during that time.

Capital expenditures for plant and equipment are usually confined to additions and replacements. Repairs, which include current expenditures on the upkeep of the existing property, are considered as an item of overhead and are controlled through the manufacturing expense budget. The costs of additions and replacements are charged to plant and equipment accounts, and are eventually charged to expense by writing off depreciation based on estimated life.

Several companies reporting their practice, control capital expenditures by having all disbursements for new equipment, replacements

or alterations over a fixed nominal amount, usually \$100, receive executive approval. Means are provided for adding the depreciation on such additions to fixed assets to the expense budget upon completion of the purchase or lease.

Capital expenditures of The Jeffrey Manufacturing Company of Columbus, Ohio, are controlled in this manner. Expenditures are authorized only upon evidence that the saving in operation costs will be equal to the purchase cost within a period of three years. Expenditures for semi-durable tools are included in the expense budget; expenditures for jigs, fixtures and miscellaneous factory equipment are set up as suspended expense distributed over a three-year period.

Executive approval is required for capital expenditures made by the Canada Dry Ginger Ale, Inc., of New York. Estimates for the necessary additions to plant and equipment are made at the beginning of the budget period and depreciation for these items is added to the departmental burden budgets.

Several companies report plant and equipment budgets developed for the control of capital expenditures. This budget provides an analysis of new equipment needed during the budget period, the cost thereof, when needed, the cost of equipment to be disposed of during the period, the time of disposal, and the estimated revenue from this disposal. The financial executive is thus afforded an estimate of the receipts and disbursements resulting from physical changes in fixed assets during the budget period.

The capital expenditures of the American Sales Book Company, Ltd., of Elmira, New

York, are budgeted in two sections and cover the period of one year:

1. Plant and Equipment.
2. Office Furniture and Fixtures.

At the beginning of each fiscal year, the Factory Superintendent lists in detail, on the form provided, anticipated plant and equipment expenditures showing the approximate purchase price of each item. This forecast, when passed by the Manufacturing Division Sub-Committee, is referred to the General Manager and later submitted to the Engineering Committee for approval. This forecast, when approved by the Engineering Committee, is forwarded to the Budget Committee for their approval.

COMPARISON OF ACTUAL AND BUDGETED ACCOMPLISHMENT

Budgetary control has been defined as the application of a systematic method of gathering information from the past and present, formulating on this basis plans for the future and, subsequently, reporting to what extent these plans have been carried out. This report, thus far, has been confined to a study of the first phase of budgetary control, the assembling of facts on which to build a plan of operation.

The second phase of budgetary control, the comparison of results of operations with the plan based on the facts assembled, will enable the management to determine how closely the formulated plans are being observed by the operating executives. Variations can be investigated immediately. Investigations will disclose one of two conditions, either the facts used in determining the program of operations were incorrect, or the management has not been operating as efficiently as possible. In either case, variations from the budget will indicate certain difficulties that should be remedied.

Frequency of Review

Comparison of budgeted and actual accomplishment is made periodically by the majority of institutions using budgetary proce-

Duplicate blank forms provided specially to record proposed purchases of office furniture and fixtures are sent to the various department heads prior to the start of the budget period. Each department head fills in the form, sending the original to the Budget Officer and retaining the duplicate for his records. The Budget Officer summarizes these estimates and submits the summary to the Administrative Division Sub-Committee.

The capital expenditures budget of the B. F. Goodrich Company of Akron, Ohio, is prepared for each fiscal year. This budget is divided into three sections, one being prepared for additions to plant, one for machinery, and one for molds.

in the control of operations. If a study of the variations between actual and budgeted expenses indicate that the facts used in the preparation of the budget were incorrect, it is the general practice to make revisions in the budget estimates and allowances for the balance of the budget period in accordance with the new facts as presented. The number of times during the budget period that the estimates and schedules are reviewed and revised depends somewhat on the length of the accounting period and the stability of business. The most common practice in those companies using an annual budget is to review the actual performance and make comparisons with the budget at the end of each monthly or four-week period. Several organizations, especially those in non-seasonal industries and whose budgetary experience in the past has been particularly satisfactory, review the budget quarterly.

Method of Comparison

Budget comparison is generally accomplished by arranging for periodical reports on which the actual costs of operation are listed and compared with budget allowances, using the same plan of classification of accounts as on the original estimate forms. These reports

OVERHEAD EXPENSE BUDGET					
DEPT.	NO.	% ADJ.	MONTH		
			MONTH		YEAR TO DATE
ACCOUNT			Adjusted Budget	Actual Expense	Adjusted Budget
					Actual Expense
					Red—Exp. Over Black—Exp. Under
LABOR					
10 Salaries and Wages—Executive.....					
11 Salaries and Wages—Clerical.....					
12 Indirect Labor.....					
13 Conferences.....					
14 Attendance Bonus.....					
15 Overtime Bonus.....					
REPAIRS					
20 Buildings.....					
21 Machinery and Equipment.....					
22 Punches, Dies, Gauges, etc.....					
24 Defective or Damaged Product.....					
25 Scrap Material and Reclaiming.....					
TOOLS					
27 Moulds.....					
28 Patterns.....					
30 Small Tools—Purchased.....					
32 Punches, Dies, Gauges, etc.....					
33 Sample Instruments.....					
SUPPLIES					
35 Entering into Mfg. Product.....					
36 General—Not Used in Mfg.....					
37 Electrical Sup. and Wiring.....					
38 Light and Power Purchased.....					
39 Coal and Water.....					
41 Stationery, Stamps & Printing.....					
MISCELLANEOUS					
43 Freight, Express & P. P.....					
44 Telephone and Telegraph.....					
45 Traveling Expense.....					
46 Interviews.....					
48-50 Council.....					
51 Vocational Training.....					
54 Association Dues.....					
60 General Expense.....					
64 Legal and Professional Service.....					
65 Catalogues and Directions.....					
69 Journal Advertising.....					
75 Development Expense.....					
77 Truck Expense.....					
78 Test or Tool Rooms.....					
APPORTIONED					
80 Building Expense.....					
81 Employees' Welfare.....					
90 Fixed Charges.....					
99 Departmental Credits.....					
TOTAL.....					
PRODUCTIVE LABOR.....					
LEEDS & NORTHRUP CO. FORM 453					

FIGURE 6—Overhead Expense Schedule and Budget Comparison

STANDARD AND ACTUAL FACTORY EXPENSE AND VARIATION ANALYSIS

PLANT..... SHEET..... OF..... MONTH OF..... 19.....

		VARIATION FROM STANDARD MONTHLY ALLOWANCE—BY ITEMS	
		UNCONTROLLABLE	CONTROLLABLE EXPENSE ITEMS
		MISC. CREDITS	
		INTER-DPT. TRAN.	
		ANALYT. LABORA.	
		PACKING EXP.	
		MEMBERSHIPS & SUBSCRIPTIONS	
		VOUCHER CHARGES	
		MEALS FURNISHED	
		AUTO AND TRUCK EXPENSE	
		MISC. EXPENSE SUPPLIES	
		MAINTENANCE AND OILING	
		POWER, LIGHT, HEAT AND AIR	
		FUEL—GAS	
		WATER—WELL	
		WATER—CITY	
		CLOTHING	
		RAW MATERIAL	
		PURCHASES	
		INSURANCE—COMMERCE	
		PATROL	
		EXTENS. JOBS	
		REPAIRS	
		WAGES AND SUPPLIES	
		BUILDING EXP. AND REPAIRS	
		INSURANCE—MISC.	
		REPLACEMENT	
		DEPRECIATION	
		TAXES	
		PER CENT. VARIATION ACTUAL TO STANDARD	
		VARIATION FROM STANDARD AMOUNT	
		ACTUAL AMOUNTS THIS MONTH	
		MONTHLY BUDGET STANDARD AMOUNT	
DEPARTMENT NO.	NAME		

FIGURE 7—Standard and Actual Factory Expense and Variation Analysis

Form 82A

Cost Unit.....

Dept..... Month..... Production.....

Stand. Yield on.....% Capacity.....

Actual Yield on.....% Stand. Prod.....

Stand. Yield on.....% Dept. Operation.....

Actual Yield on.....% Factory Operation.....

MATERIALS	STANDARD		ACTUAL COST		VARIATIONS	
	Per Unit of Prod.	Allowance for Total Production	Quantity Used	Std. Purch. Price per Lb. or Gal.	AMOUNT	LOW GAIN
TOTAL						
CREDITS						
TOTAL						
NET						
DIRECT EXPENSE						
Wages						
Salaries—Prod. Supt.						
Salaries—Chemist						
Power, Light and Heat						
Repairs—Minor						
Repairs—Major						
Maintenance						
Water—City						
Water—Well						
Fuel						
Refrigeration and Ice						
Filters						
Supplies						
Laboratory						
Expense to Finish Operations						
TOTAL						
INDIRECT EXPENSE						
Building Expense						
Taxes						
Insurance						
Depreciation						
General Office						
Factory Office and Supt.						
Warehouse Expense						
Yard and Misc. Expense						
Purchasing and Traffic Expense						
Expense to Finish Operations						
TOTAL						
TOTAL PRODUCTION COST						
SELLING, ADMINISTRATIVE AND SHIPPING						
Sales						
Packing Expense						
Trucking and Shipping Expense						
Direct Selling Expense						
General Selling and Administration						
TOTAL						
TOTAL COST						
TOTAL INVESTMENT		DEPARTMENT STOCK		UNIT COST VARIATIONS		
Mach. and Equip.		Standard		Transf'd Material Cost		
Depreciation Reserve		First of Month		Raw Material Cost		
Replacement Reserve		Last of Month		Material Used		
Replacement Charges				By-Products		
Installation Charges		FINISHED GOODS		Direct Expense		
Dismantling Credits		Standard		Indirect Expense		
		First of Month		TOTAL		
		Last of Month				

FIGURE 8—Monthly Standard Cost Comparison

usually contain a column for the budget estimates, a column for actual results, and a column for variations between the two, expressed either in dollars and cents, percentages, or both. It is also customary to have a similar comparison for the year to date.

Figure 6 (page 25) illustrates the form used by Leeds and Northrup Company of Philadelphia, for making a monthly comparison between the budget and actual departmental expense. It will be observed that in this particular instance, the budget includes apportioned expense as well as those expenses incurred directly by the department. This form also illustrates the use of factory accounts in preparing the budget.

Figure 7 (page 26) shows the standard and actual expense and variation analysis used by the Monsanto Chemical Works of St. Louis. On this sheet will be found a summary of the departmental comparisons between actual and standard expense. The total actual and standard expense for each department is given together with the total variation and the per cent. variation of actual to standard. Variations between actual and standard for the itemized expenses of each department are shown on this form by a percentage figure. Thus the management have presented to them on one sheet the total variations of each department and the accounts in which these variations occur.

The figures from which this variation analysis is prepared are obtained from Figure 8 (page 27), the monthly standard cost comparison of each product. The operations of the Monsanto Chemical Works are divided by departments, each article being produced in a separate department, although occasionally two products are made simultaneously in one operation. Thus the standard cost comparison for a product becomes the cost comparison for a department. By-products of value in an operation are credited on the cost comparison, and are charged to some other department as raw material if they are so used.

Figure 9, opposite, illustrates the schedules used by The Fairbanks Company of New York for comparing actual and budgeted

performance. This form compares the actual expenditures with the budget for all raw material used in the Brass Valve Division. The accumulated actual and budgeted expenses for the year to date are also compared on this form. Figure 10 is used for comparing all the departmental expenses for each department that are controlled by the foreman. The actual and budgeted expenses for the budget period and the year to date are compared by department and in summary form. Figure 11 shows the factory and administrative department expenses controlled by the management. Comparisons are made in the same manner as on the other forms. Figure 12 (page 30) is a summary of the cost of manufacturing. It is, in effect, a summary of the three previous forms and shows the profit or loss for the year to date.

Use of Graphic Charts for Comparison

Graphic charts are sometimes used in conjunction with statistical analysis for comparing actual and budgeted performances. Although the determination of actual results in dollars and cents is more difficult on a graph, variations and trends can be visualized more rapidly with a consequent saving of time.

The Norton Company has established for every expense account of every department, including administrative, service and productive, a chart similar to Figure 13 (page 31). For the productive departments the abscissa is the production for that department measured in terms of dollars of list value. The ordinates are the dollars of expense. The curve represents the budgeted allowance for that particular expense item for each dollar of sales. At the beginning of a quarter, the planning department estimates the production for each department in terms of dollars of list value. This is turned over to the budgetary control department which, by finding the corresponding amount on each expense chart for that volume and following up the ordinate to the curve, determines the allowable expense for that item. Additional allowances are made when necessary to assure most efficient operation of that department.

Report of Budget Accomplishment

At the end of each quarter the results are plotted on the graph and all variations over the curve must be accounted for. These quarterly results are plotted as points, but are not drawn in as curves. Monthly and quarterly the same results are entered in a ledger in which actual and budget accomplishments are compared. The operating report for the management is made up from the figures shown in this ledger.

A report of budget accomplishment is submitted to the head of each department in the Norton Company in the form shown in Figures 14 and 15 (pages 32 and 33). These are combined in the form of a booklet and are reviewed by the works manager, the budgetary control department, the methods department, the general foreman, assistant foreman, and the departmental foreman. In the department whose budget report is illustrated, the production and direct labor are shown in dollars for each period and compared with averages of past years. The ratio of direct labor to in-

report is illustrated, the production of direct labor are shown in dollars for each period and compared with averages of past years. The ratio of direct labor to in-

FIGURE 9

FIGURE 10

FIGURE 11

Departmental and Factory Overhead Schedules and Budget Comparison

FIGURE 11

Departmental and Factory Overhead Schedules and Budget Comparison

METROPOLITAN LIFE INSURANCE COMPANY

THE FAIRBANKS COMPANY BIRMINGHAM, N.Y. COST OF MANUFACTURING VALVES PERIOD ENDING MAR. 25, 1930								
COST OF MANUFACTURING	Period ended Jan. 28	Cost Per Ton Good Castings	Period ended Feb. 22	Cost Per Ton Good Castings	Period ended Mar. 25	Cost Per Ton Good Castings	Total to Date	Cost Per Ton Good Castings
Direct Labor								
Direct Materials								
Indirect Labor H & D Workers								
Department Expense Iron Division Brass Division								
Total Department Expense								
Factory General Expense Indirect Labor-Foremen-Clerks Fact. Gen'l Salaries-Taxes, Etc.								
Total Factory General								
Total Overhead Budget								
Total Put in Process Budget								
Loss or Gain from Budget Direct Labor Direct Materials Department Expense Indirect Labor H & D " " F & G Factory General Inc. or Dec. Production								
Net Loss or Gain from Budget								
Total Actual Overhead								
Total Put in Process Actual								
Net Change, Work in Process								
Net Change, Finished Parts Adjustments								
Cost of Valves Mfg. Billing Value Valves Mfg.								
Profit on Valves Mfg. % Profit								
Net Sales to Branches Profit on Sales to " (Profit tied up in Inventory) % Profit Profit tied up in Inventory								

FIGURE 12—Summary of Cost of Manufacturing

direct labor is also shown in the same manner. Graphs are shown to each department head for the major items of expense in his department.

On the Department Budget and Expenditure Report which accompanies this graph, all items of expense are recorded. There are two costs worked out on a standard basis from the figures derived from the charts of expenses. The first cost is figured at standard for the estimated production for the quarter, the second for the actual production figure

for the quarter at standard. The actual expenses are figured for each of the three periods in the quarter and are totalled at the end of the quarter and compared with the standard cost for actual production.

In a report of this kind there are two kinds of variation which must be accounted for. The first is the difference between actual production and estimated production in terms of dollars. The responsibility for this variation lies between the planning depart-

BUDGETING MANUFACTURING OPERATIONS

ment and the foreman, and can be determined by checking the production orders. The second variation is between the actual costs

of actual production and the standard costs of actual production. The responsibility for these expenses belongs to the foreman.

INCENTIVE SYSTEMS FOR SECURING BUDGET ACCOMPLISHMENT

The majority of wage incentive systems for securing budget accomplishment are a part of the general wage incentive plan rather than being set up merely to interest the executives in watching costs. Many executives feel that it is far more profitable to use a method of wage payment that will assist the department heads in developing their managerial ability and help them to become better all-around executives, rather than expense watchers exclusively.

Since all manufacturing costs can be divided roughly into three classes, labor, material, and overhead, it may be well to discuss briefly how incentives may aid in securing budget accomplishment for these three costs.

Wage Incentives

One method for keeping within the budget allowance for direct labor is by the use of a system of wage incentives for employees engaged in the manufacture of the product. When the production schedule has been set, it is a simple matter to determine the labor costs by multiplying the number of operations to be performed by their respective rates. Of course, the cost of breaking in new men and the overtime excess will have to be determined and added to the cost, but the incentive offered will have a strong tendency to keep the labor cost within the budgeted amount.

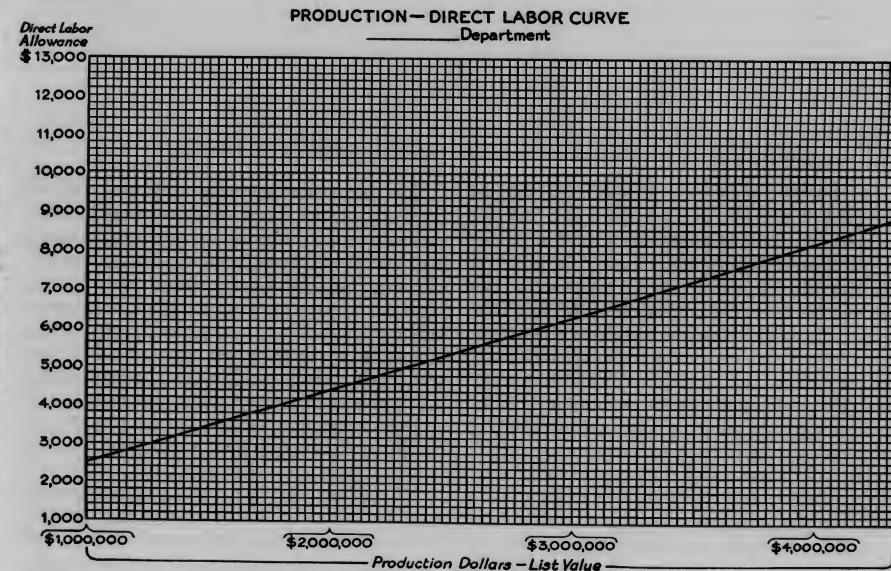


FIGURE 13—Direct Labor Allowance for Varying Volumes of Production

METROPOLITAN LIFE INSURANCE COMPANY

1931-32-33
MORTGAGE COMPANY

Kiln-Plant DEPARTMENT BUDGET AND EXPENDITURE REPORT 1st Quarter 1930

STANDARD NUMBER	ITEM	ACTUAL EXPENDITURE				STANDARD FOR ACTUAL PRODUCTION	STANDARD FOR ESTIMATED PRODUCTION	BUDGET		
		Jan. Wks.	Feb. Wks.	Mar. Wks.	TOTAL			ORIGINAL AMOUNT	APPROVED CHANGES	ADJUSTED BUDGET
	<i>General Indirect Labor - Direct Labor</i>	2432	2432	2432	7300	2432	2432	2432	2432	2432
	INDIRECT LABOR									
100	Supervision and clerical	549	527	422	1498	1498	1498	1498	1498	1498
101	Breaking in men									
104	Trucking and handling materials	14	71	92	177	262	262	262	262	262
108	Setting up	275	266	241	782	782	782	782	782	782
	Total Indirect Labor	738	664	755	2157	2542	2542	2542	2542	2542
	EXPENSE									
300	Switching cars on Norton R. R.									
611	Templates, gauges, and staking flanges									
612	Moving and re-erecting equipment									
613	Molds and mold parts									
615	Arkers and bushings shaving dies, and boms									
630	Trucking (auto, team, and crane)									
630	Repairs to machinery and motors	24	24	10	58	77	77	77	77	77
651	" building, flutes, and plates	1	24	67	92	122	122	122	122	122
652	" main line bearings, shafting, and rollers					12	12	12	12	12
653	New building renewals and repairs									
656	New tools									
659	Furniture, fixtures, and appliances	12	9	12	33	62	62	62	62	62
667	Safety devices	36	223	2	261	262	262	262	262	262
697	Office shifting									
699	Misc. supplies	29	11	39	79	62	62	62	62	62
	Power, heat, and light	146	161	262	569	569	569	569	569	569
	Travel	2209	2267	2262	6738	6738	6738	6738	6738	6738
	TOTAL EXPENSE	2411	2409	2442	7262	7262	7262	7262	7262	7262

FIGURE 14—Report of Budget Accomplishment—First Page

Foremen's Bonus

A bonus for foremen is also beneficial in keeping the labor costs within the budget allowance. This is particularly true in those departments where the foreman is allowed to use his discretion as to whether a job should be done on a piece work or day rate basis. It is also helpful in influencing the foreman to keep his necessary indirect labor such as inspection, clerical, supervision, trucking, etc., down to an absolute minimum. Other factors considered by a large metal working plant in paying a foreman's bonus are supervision of labor turnover, attendance, accidents, health and welfare. It is evident that all these factors play a large part in the cost of labor, and the payment of a bonus to a foreman to reduce these expenses will be of assistance in maintaining the labor budget.

Quality Bonus

The control of material costs per unit of finished product is aided by the use of quality and waste material bonuses. Although bonuses of this type, paid to productive employees, are occasionally found in industry, they are more generally restricted to foremen and superintendents. In general, most wage incentive systems stress the production standards, with quality and waste being taken care of by fixing a definite percentage or amount of money by which the production bonus is decreased if the specified quality standards are not maintained.

It is interesting to note in this connection that in a recent survey conducted by the National Industrial Conference Board of 107 plants employing 326,175 workers, only eight plants with 693 participating employees used

BUDGETING MANUFACTURING OPERATIONS

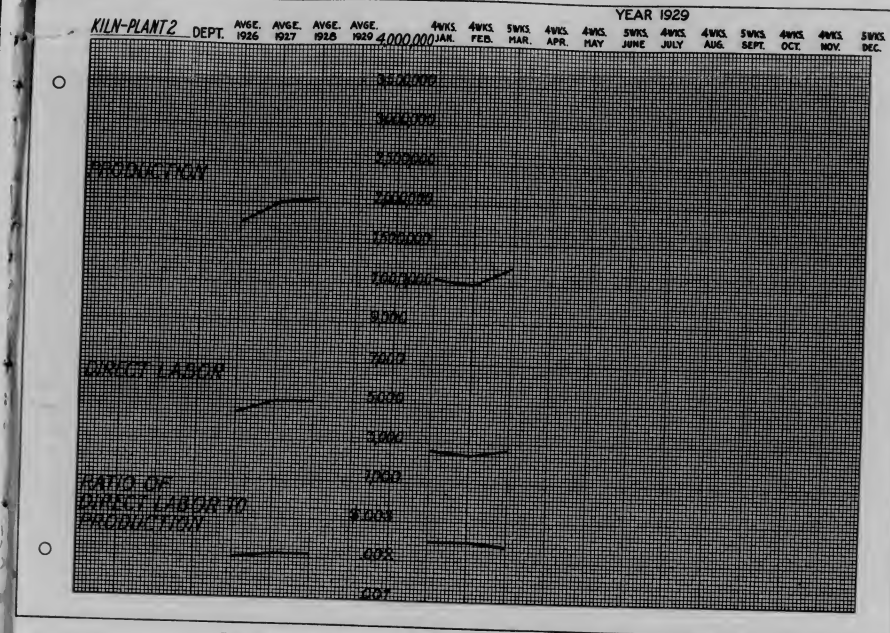


FIGURE 15—Report of Budget Accomplishment—Second Page

a bonus for prevention of waste, and only eight plants with 9,589 participating workers used a bonus on improved quality. Although this same survey showed that only four plants out of seventy-seven paid a supplementary bonus to supervisors for improved quality and three for prevention of waste, twenty-seven paid a bonus to their supervisors based on general merit. The greater part of these twenty-seven general merit plans included factors based on maintaining standards of quality and prevention of waste. This general merit bonus, as a rule, is an award for a combination of meritorious achievements, which can be definitely measured, although some companies pay it out of net profits for general accomplishments.

Bonus for Control of Overhead Expense

In the control of overhead expenses a bonus plan can be tied into the plan of bud-

etary control. Such a bonus plan is usually limited to foremen and executives. In another survey made by the National Industrial Conference Board of 33 companies in which there were 427 executives participating in bonus programs, only one had a definite bonus plan for savings between budgeted and actual expenditures. However, 24 had bonus plans based on general merit which, in some instances, included the accomplishment of the budgetary program.

The Ritter Dental Manufacturing Company of Rochester, New York, has developed a bonus plan in connection with its budget of factory overhead. The budgeting of factory overhead expense is done to give a closer check on this expense and to determine as closely as possible what this expense should be. Overhead is made up of four elements—indirect labor, supplies, scrap, and fixed

METROPOLITAN LIFE INSURANCE COMPANY

121-122-800
NORTON COMPANY

Kiln Plant 2

DEPARTMENT BUDGET AND EXPENDITURE REPORT

1st Quarter 1930

STANDING ORDER	ITEM	ACTUAL EXPENDITURE				AT A GLANCE FOR PRODUCTION	STANDARD FOR PRODUCTION	BUDGET		
		Jan WKS	Feb WKS	Mar WKS	TOTAL			ORIGINAL AMOUNT	APPROVED CHANGE	ADJUSTED BUDGET
	<i>General Production - Direct Labor</i>	24000	24000	24000	72000	24000	24000	24000	-	24000
	INDIRECT LABOR									
100	Supervision and clerical	349	337	400	1086	1060	1060	1060		1060
101	Bracking in men									
103	Miscellaneous	14	71	90	245	260	260	260		260
104	Trucking and handling materials									
108	Setting up	276	266	261	791	780	780	780		780
	Total Indirect Labor	701	663	751	2115	2100	2100	2100	-	2100
	Labor Bonus									
	EXPENSE									
300	Switching cars on Norton R. R.									
611	Templates, gauges, and sizing flanges									
612	Moving and re-erecting equipment									
613	Molds and mold parts									
615	Arbors and bushings, shaving rings, and hats									
619	Trucking (auto, team, and crane)									
650	Repairs to machinery and motors	24	24	10	58	76	76	76		76
651	" building, lights, and piping	1	26	67	94	100	100	100	60	157
652	" main line hangers, shelving, and pulleys					10	10	10		10
653	New belting, renewals and repairs									
656	New tools	10	9	10	29	50	50	50		50
659	Furniture, fixtures, and appliances	36	233	2	271	260	260	260		260
662	Safety devices									
692	Oiling shelving	20	11	30	61	60	60	60		60
695	Misc. supplies	65	64	14	143	130	130	130		130
	Power, heat, and light	146	141	260	547	540	540	540		540
	<i>Total</i>	3209	3067	3260	9536	9580	9580	9580		9580
	TOTAL EXPENSE	3211	3069	3262	9542	9580	9580	9580		9580

RECORDS ON REVERSE SIDE

FIGURE 14—Report of Budget Accomplishment—First Page

Foremen's Bonus

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BUDGETING MANUFACTURING OPERATIONS

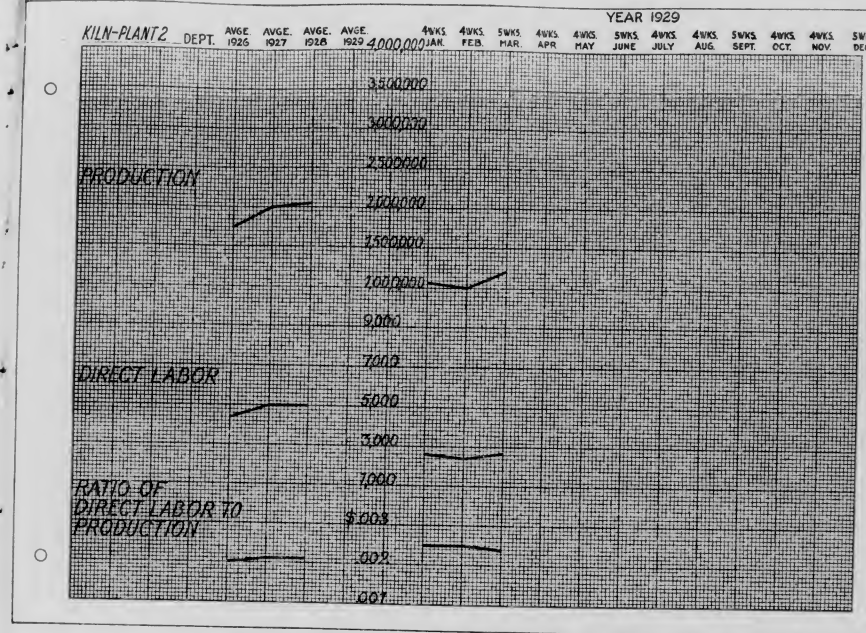


FIGURE 15—Report of Budget Accomplishment—Second Page

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charges. Since fixed charges are not controlled by the various department heads, this element was not considered in setting up a bonus. Similarly, the experimental divisions and a few other departments are eliminated from the plan.

The bonus plan of the Ritter Dental Manufacturing Company was inaugurated to

secure the best cooperation of foremen and department heads. The bonus is paid to each foreman and department head in a position to control expense and is based on the percentage of saving between the budgeted and actual expense for the plant as a whole. Each foreman receives this percentage of his salary at the end of the year.

INSTALLATION OF THE BUDGET

In installing a system of budgetary control, the usual procedure is to experiment with a department or set of accounts, the expenses of which are readily controllable. The system is further developed then by trial and error until sufficient experience and enough confidence in the principles of budgetary control are attained to warrant extending the budget to other departments or accounts. One of the most common and effective methods is to prepare estimates and allowances for overhead expenses and slowly build on this foundation a complete budget for all operations.

The method of attack used by the American Writing Paper Company is illustrative of the manner by which budgetary control may be instituted. The first step taken by this company was the development of a sales forecast. This was considered the logical step on which to base a necessary reorganization of production methods.

The sales forecast enabled the American Writing Paper Company to make up manufacturing quotas for its various mills. As paper sales fluctuate widely during the year, it became necessary to level the production curve. Ordering points, maximum limits and economical sizes of production orders were worked out for each of the various stock papers, and the issuing of production orders was placed in the hands of the department responsible for the sales forecasts. A perpetual inventory system was set up to assist this department in operating its stock control.

Since the American Writing Paper Company operates several mills, the policy was adopted of allocating the different lines of manufacture to certain mills and equipment.

This enabled the company to establish standard specifications of manufacture for each of its products. These specifications set up the percentage of the various materials that enter the composition of the paper. By applying the standard specifications to the manufacturing quotas, material quotas were developed for all of the materials used by the production departments. This enabled the company to reduce the amount of working capital tied up in raw material inventories and avoided accumulating raw materials for lines of products which had become obsolete.

After the manufacturing quotas had been established, a standard payroll for regular operation was set up and operated from the Employment Department through authorization cards. There is one authorization card for each position. As long as someone is on the payroll covering that authorization, no additional employment is made without a change in the standard payroll or a temporary authorization signed by the proper authority.

The next step was the installation of a group bonus system in all the mills by which a standard number of man-hours is set up for each of the groups of employees. Actual time is measured against standard to determine the efficiency. For each efficiency rating there is a table of corresponding bonuses to be added to the employees daily wage. Overhead standards were worked out from past experience and, with the exception of such relatively fixed items as taxes, insurance, and depreciation, these standards vary with production.

The result of the foregoing has been the installation of a standard cost system embodying the usual three items of material,

labor and burden. The standard specifications cost becomes the standard material cost. The standard payroll and the resulting figures for production rates, together with standards set for the bonus system, give the standard labor cost. Standard overhead costs are secured by prorating the budgets for overhead items.

Another method of approach is illustrated in the following statement by J. R. Tobey, Assistant Treasurer of Eaton, Crane and Pike Company, Pittsfield, Mass.:

Our first attempt at budgeting was done before very much was heard about the budget, at which time we used to budget our advertising appropriation. This went on for several years until everyone became interested in budgeting and at that time we started with indirect labor, and then departmental supplies and indirect material, and each year we picked up a few expenses until we gradually had all of the expenses involving

the manufacturing cost of goods sold. After we completed these, we took the selling expenses and the administrative expenses, etc., until we had accumulated and collected in our budget every item of expense that went into our profit and loss statement.

It takes several years to build up a budget so that it is working well. It is not an easy thing to install a budget in a plant or an office. There is always a great reaction from the people, particularly foremen and executives who will say that it is impossible to prepare a budget for this expense or that expense, but anyone who has had much experience in budgeting will soon find that there is always a way, either by trends, curves or percentages of some kind, that will give a basis from which to prepare a budget.

It takes some time to prepare a budget and have it operate successfully, and we have had to build this up over a period of many years, educating our people so that they think in the terms of budget, until we feel that we have a powerful control of our expense.

PRESENTATION OF THE BUDGET

An important factor in developing a budget program is the attitude of the organization's personnel. The introduction of control through the budget requires education of the executive personnel to the advantages to be derived. In long established organizations it is common to find that responsibilities have

been loosely and indiscriminately delegated with limits of authority not clearly defined. Since budgetary control takes for granted clearly defined responsibility, this situation must be clarified before the budget can be applied successfully. An organization study is usually helpful.

THE BUDGET MANUAL

A manual of budget procedure is a helpful guide both in the introduction and maintenance of the budget. It is a place of reference on procedure and defines the duties and authority of each individual and committee as members of the budgetary organization.

The *Manual of Budget Procedure* prepared and used by the American Sales Book Company, Ltd., consists of twenty-four typewritten pages on which various phases of budgetary control are covered. The budget

organization and the functions of the personnel in budget operation are set forth. The *Manual* outlines the procedure for the preparation of the capital expenditures budget, the purchasing budget, the sales estimates, the sales expense budget, the administrative expense budget, the production schedule, and the production budget, giving in each instance the items to be taken care of and the function responsible for each, thus providing a definite guide to budget operation.

VALUE OF THE BUDGET

The chief value of any system of budgetary control lies in the results that are or can be obtained through its use. Also, many executives are firmly convinced that the budget is one of the most useful implements for establishing executive control. A statement of results obtained in several industries by the use of a budget system may not be out of place in concluding this report.

A. J. Paget, Auditor of the Fairbanks Company, reports that in the first three months of 1930 the manufacturing costs exceeded the budget allowance by only 2.18 per cent. This is considered a very satisfactory showing when the unsettled business conditions of this period are considered.

A company manufacturing building equipment produced to customers' specifications, has been able to forecast its sales over a period of ten years with an accuracy of 84 per cent. For the last two years they have been able to obtain 95 per cent. accuracy.

A. J. P. Estlin, Assistant Treasurer, Canada Dry Ginger Ale, Incorporated, states that his company has found that with their cost accounting methods it has been possible to estimate production costs with a variation of considerably less than one-tenth of one per cent.

Eli Lilly & Company have been establishing sales quotas for the past six years. During that period their actual sales have varied

from the estimates within one or two per cent. each year.

The Andrews Steel Company, Newport, Kentucky, have employed a plant and maintenance budget for several years with considerable success. The Controller of this company, H. B. Boal, states that through the use of this budget the firm has succeeded in reducing labor, material and overhead costs from seven to twelve per cent. below the budget allowance by improving the operating efficiency of their departments.

The final objective of the control system used by the American Writing Paper Company has been to assure profits. L. S. Reynolds, Controller of this company, states:

Although we have not yet reached 100 per cent. efficiency with this system, it functions more perfectly each succeeding year.

Referring to the practical operation and value of a budget system, H. I. Smeltzer, Treasurer of Robbins and Meyers, Inc., Springfield, Ohio, closes his letter with the following paragraph:

If the management recognizes the benefit of budgets and backs them up to the limit, all organizations with a good accounting and cost system should have no difficulty in working out a satisfactory budget procedure. The benefits from such a program are so well recognized that further comment seems unnecessary.

ACKNOWLEDGMENT

THE POLICYHOLDERS SERVICE BUREAU gratefully acknowledges the generous cooperation of the following companies in the preparation of this report. It also wishes to express its appreciation to the other companies who furnished helpful information, but who preferred to have their names withheld, due to the nature of their operations. Similarity of practices among several companies precluded the insertion of all the illustrations of budgetary control methods contributed by the cooperating companies.

A		D	
ALLIED BARREL CORPORATION.....	Oil City, Pa.	DAYTON STEEL FOUNDRY COMPANY, THE.....	Dayton, Ohio
AMERICAN AGRICULTURAL CHEMICAL Co., THE.....	New York, N. Y.	DEERE & COMPANY.....	Moline, Ill.
AMERICAN BOSCH MAGNETO CORPORATION.....	Springfield, Mass.	HENRY DISTON & SONS, INC.....	Philadelphia, Pa.
AMERICAN BRASS COMPANY, THE.....	Waterbury, Conn.	DOEHLER DIE CASTING COMPANY.....	New York, N. Y.
AMERICAN ROLLING MILL COMPANY, THE.....	Middletown, Ohio	E	
AMERICAN SALES BOOK COMPANY, LTD.....	Elmira, N. Y.	EATON, CRANE & PIKE COMPANY.....	Pittsfield, Mass.
AMERICAN STEEL FOUNDRIES.....	Chicago, Ill.	ECLIPSE AVIATION CORPORATION.....	East Orange, N. J.
AMERICAN WRITING PAPER COMPANY, INC.....	Holyoke, Mass.	THOMAS A. EDISON, INC.....	Orange, N. J.
ANDREWS STEEL COMPANY, THE.....	Newport, Ky.	ERIE CITY IRON WORKS.....	Erie, Pa.
ARMSTRONG CORK COMPANY.....	Lancaster, Pa.	F	
ATLANTIC REFINING COMPANY, THE.....	Philadelphia, Pa.	FAIRBANKS COMPANY, THE.....	New York, N. Y.
B		FIBREBOARD PRODUCTS, INC.....	San Francisco, Calif.
BABCOCK & WILCOX COMPANY, THE.....	New York, N. Y.	FIRESTONE TIRE & RUBBER COMPANY, THE.....	Akron, Ohio
BIGELOW-SANFORD CARPET COMPANY, INC.....	Thompsonville, Conn.	FOSTER WHEELER CORPORATION.....	New York, N. Y.
BUFFALO FOUNDRY AND MACHINE COMPANY.....	Buffalo, N. Y.	FULLER BRUSH COMPANY, THE.....	Hartford, Conn.
C		G	
CAMPBELL, WYANT & CANNON FOUNDRY COMPANY.....	Muskegon, Mich.	THE B. F. GOODRICH COMPANY.....	Akron, Ohio
CANADA DRY GINGER ALE, INC.....	New York, N. Y.	H	
CARBORUNDUM COMPANY, THE.....	Niagara Falls, N. Y.	HAZEL-ATLAS GLASS COMPANY.....	Wheeling, W. Va.
CHAMBERSBURG ENGINEERING COMPANY.....	Chambersburg, Pa.	HINDE & DAUCH PAPER COMPANY, THE.....	Sandusky, Ohio
CHENEY BROTHERS.....	South Manchester, Conn.	I	
CHRYSLER CORPORATION.....	Detroit, Mich.	INDUSTRIAL BROWNHOIST CORPORATION.....	Cleveland, Ohio
CLEVELAND-CLIFFS IRON COMPANY, THE.....	Cleveland, Ohio	J	
COLGATE-PALMOLIVE-PEET COMPANY.....	Chicago, Ill.	JEFFREY MANUFACTURING COMPANY, THE.....	Columbus, Ohio
C. G. CONN, LTD.....	Elkhart, Ind.	JOHNSON & JOHNSON.....	New Brunswick, N. J.
		K	
		KALAMAZOO VEGETABLE PARCHMENT COMPANY.....	Kalamazoo, Mich.
		KELLEY-SPRINGFIELD TIRE COMPANY.....	New York, N. Y.

METROPOLITAN LIFE INSURANCE COMPANY

L

LEEDS & NORTHRUP COMPANY.....Philadelphia, Pa.
 LEVER BROTHERS COMPANY.....Cambridge, Mass.
 LIBBY, McNEILL & LIBBY.....Chicago, Ill.
 W. S. LIBBEY COMPANY.....Lewiston, Me.
 ELI LILLY & COMPANY.....Indianapolis, Ind.
 LONG BELL LUMBER COMPANY, THE.....Longview, Wash.
 LOWE BROTHERS COMPANY, THE.....Dayton, Ohio
 LYCOMING MANUFACTURING
 COMPANY.....Williamsport, Pa.

M

MACBETH-EVANS GLASS COMPANY.....Charleroi, Pa.
 MINNEAPOLIS-MOLINE POWER IM-
 PLEMENT COMPANY.....Minneapolis, Minn.
 MONROE CALCULATING MACHINE
 COMPANY, INC.....Orange, N. J.
 MONSANTO CHEMICAL WORKS.....St. Louis, Mo.
 MURPHY VARNISH COMPANY.....Newark, N. J.

N

NATIONAL ACME COMPANY, THE.....Cleveland, Ohio
 NATIONAL ENAMELING AND STAMPING
 COMPANY, INC.....Milwaukee, Wis.
 NEWPORT NEWS SHIPBUILDING & DRY
 DOCK COMPANY.....Newport News, Va.
 NORTH AMERICAN CEMENT
 CORPORATION.....Albany, N. Y.
 NORTON COMPANY.....Worcester, Mass.

O

OTIS ELEVATOR COMPANY.....New York, N. Y.

P

PACIFIC MILLS.....Boston, Mass.
 PENNSYLVANIA SALT MANUFACTURING
 COMPANY.....Philadelphia, Pa.
 PURINA MILLS.....St. Louis, Mo.

R

REED-PRENTICE CORPORATION.....Worcester, Mass.
 RITTER DENTAL MANUFACTURING
 COMPANY, INC.....Rochester, N. Y.
 ROBBINS & MYERS, INC.....Springfield, Ohio
 ROWNTREE COMPANY, LTD., THE.....Toronto, Can.

S

SHEPARD NILES CRANE & HOIST
 CORPORATION.....Montour Falls, N. Y.
 SIVYER STEEL CASTING COMPANY.....Milwaukee, Wis.
 SQUARE D COMPANY.....Detroit, Mich.
 STANDARD BRANDS, INC.....New York, N. Y.
 STANLEY WORKS, THE.....New Britain, Conn.
 SULLIVAN MACHINERY COMPANY.....Chicago, Ill.
 SUN OIL COMPANY.....Philadelphia, Pa.

T

TAYLOR-WHARTON IRON & STEEL
 COMPANY.....High Bridge, N. J.

W

WALWORTH COMPANY.....Boston, Mass.
 WESTERN ELECTRIC COMPANY.....New York, N. Y.
 WESTINGHOUSE ELECTRIC & MANU-
 FACTURING COMPANY.....East Pittsburgh, Pa.



POLICYHOLDERS SERVICE BUREAU
METROPOLITAN LIFE
INSURANCE COMPANY
HOME OFFICE . NEW YORK
Pacific Coast Head Office, San Francisco
British Isles Head Office . . . London
Canadian Head Office Ottawa

A MANUAL OF BUDGET PROCEDURE

Supplement to
Budgeting Manufacturing Operations

NOTE This report was prepared to answer specific questions presented by a Group insurance policyholder of the Metropolitan. It was compiled with special reference to the situation confronting the organization for which the work was done, and is not intended as an all-inclusive discussion of the subject. The report has been made available for general distribution because it is believed that much of its contents will be of interest to executives confronted with similar problems. In its present form, references or material of exclusive interest to the company for which it was prepared, have been removed.

Prepared by
Policyholders Service Bureau
Metropolitan Life Insurance Company
New York City
1931

A MANUAL OF BUDGET PROCEDURE

The primary purpose of a budget is the coordination and control of the various functions of which a business enterprise is composed. In the preparation of the budget, the management outlines the general plans and policies of the company for the forthcoming budget period, and through the combined endeavors of the operating officials, a detailed plan of activities is prepared, based on historical records and tempered with executive judgment of expected conditions.

Budgetary control presupposes an organization whose limits of authority have been clearly and definitely defined, both in the operation of the enterprise under the budget plan as well as in the preparation of the budget program. The absence of clearly defined authority often results in resistance to the program and evasion of responsibilities. Such a situation nullifies to a large degree the many advantages possible under a system of budgeted control.

A manual of budget procedure is a helpful guide both in the introduction and maintenance of the budget program. In it, authority and responsibility for the preparation and administration of the budget are clearly delegated. It defines the duty and authority of each individual and committee as members of the budget organization and is a place of reference on budget procedure. It insures the preparation of each budget in a uniform manner and it assists the organization in coordinating its plans and activities.

This report is confined to a reproduction of the Manual of Budget Procedure used by the American Sales Book Company, Ltd. Its publication is made possible through the cooperation of that company.

The American Sales Book Company, Ltd., together with its affiliated

companies manufacturing sales books, sales slips, carbon paper and many other business forms, operates six factories located in New York, California and Washington. In its Manual, the budget organization and the functions of the personnel in the operation of the budget are set forth. It outlines the procedure for the preparation of the Capital Expenditures Budget, the Purchasing Budget, Sales Estimates, the Sales Expense Budget, the Administrative Budget, the Production Schedule and the Production Budget, giving in each instance the several items to be budgeted, the method of preparing estimates and the individual or committee responsible for their preparation. Thus it provides a definite guide to budget operation.

Companies using a budget manual have found it helpful in the operation of their budget systems, but there are relatively few organizations which have attempted to construct or maintain such a manual. For that reason, the American Sales Book Company's Manual of Budget Procedure is presented in the hope that the principles on which it is designed may be of assistance to other companies contemplating the preparation of a budget manual. The detailed construction of such a manual generally may best be undertaken by the organization itself, so that the many individual organization and operation characteristics peculiar to the enterprise will be taken into consideration.

The following Manual of Budget Procedure may be of particular interest for several reasons: its adherence to the essential principles of budgetary control; the definite manner in which all budgetary authority and responsibility have been assigned; the simplicity and brevity of the presentation; and the logical sequence of its construction.

AMERICAN SALES BOOK COMPANY, LTD.

MANUAL OF BUDGET PROCEDURE

FOREWORD

A budget has been defined as a plan of combining the coordinated intelligence of an entire organization into a plan of activity based upon records of past performance and governed by the rational judgment of factors that will influence the course of the business in the future.

Adherence to the procedure set forth in this manual will give complete budgetary control, individually and collectively, of the various phases of this business.

ORGANIZATION

The Company's Executive Committee consisting of the President, Vice-Presidents, General Manager, Secretary, Treasurer, Sales Manager and the Factory Superintendents will act as the Budget Committee.

Personnel

Functions

1. This committee shall be in charge of the budgetary control program.
2. To consider, approve or reject all forecasts.
3. To receive periodic reports showing comparison of actual performance with budget.
4. To consider revision of budget at any time, but particularly at the close of each quarter.

- 2 -

Treasurer

This office shall have general control and supervision over the preparation and execution of budgetary program.

Duties

1. To receive from the heads of the various divisions of the business their forecasts for Budget period.
2. To present forecasts of various divisions to General Manager for approval or suggested revisions.
3. To prepare from divisional forecasts submitted summaries showing:
 1. Estimated profit and loss statement
 2. Estimated balance sheet
 3. Estimate of surplus cash available for period.
4. To submit to the Executive Committee for their approval the divisional forecasts as recommended by the General Manager.
5. To receive and submit to Department Heads periodic reports prepared by the Accounting Department showing the actual performance as compared with Budget.
6. To prepare periodic reports for review of Budget Committee showing comparisons of actual performance with Budget.

Budget Officer

It will be the duty of the Budget officer to supervise the preparation by the various departments of all data required in building the Budget. The Budget officer will be the inter-department "point of contact"

- 3 -

for all matters pertaining to the Budget. This officer will be a member of all sub-committees and will be responsible and report to the Treasurer.

Executive Divisions The Executive Heads of the various divisions of the business will be entirely responsible for the preparation of the estimates of their divisions. These estimates should be compiled along the lines indicated in the Manual of Budget Procedure.

In order to delegate responsibility for preparation and execution of estimates, sub-committees will be appointed to carry out the budgetary program for their departments.

The Sales Division sub-committees will consist of the Sales Manager, the Assistant Sales Managers, the Treasurer or the Budget Officer.

The Manufacturing Division sub-committees will be composed of the Factory Superintendent, the Assistant Factory Superintendent, the Cost Accountant and the Treasurer or the Budget Officer.

The Administration Division sub-committee will be composed of the Treasurer, the Assistant Treasurer, The Budget Officer and two senior members of the Office Organization.

The Divisional Forecasts should be completed in such time as to allow completion of Master Budget before the beginning of the Budget period.

Budget Term

Semi-annual Master Budgets will be prepared covering:

- (a) Six months period ending June 30
- (b) Six months period ending Dec. 31

The Master Budget will be a summary of the monthly budgets of each division for the respective six months period.

At the time (a) above is prepared, a Forecast for the last six months of the year will also be compiled so that a general Forecast for the year as a whole will be available.

Revision of Budget

The Budget will be subject to revision at any time upon instructions from the Executive Committee.

- 5 -

CAPITAL EXPENDITURES

Proposed capital expenditures will be budgeted in three sections and cover the period of one year:

1. Land and Buildings
2. Plant and Machinery
3. Office Furniture and Fixtures.

In preparing each section, each item thereon will be distinguished to indicate if -

1. Budget appropriation was in whole or in part previously authorized.
2. Budget appropriation is to cover an expenditure to be made in the current year.
3. Budget appropriation is to cover a commitment to be made in the current period but expenditure made in a subsequent year.

1. Land and Buildings The Treasurer will secure formal approval to a budget to cover any proposed expenditure in excess of \$100, which will have been endorsed by the Executive Committee. Expenditures for lesser amounts will be treated as expense.

2. Plant and Machinery The Factory Superintendent after conferring with the Manufacturing Sub-committee will list in detail on the form provided, anticipated purchases giving full details

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of the reason for recommendation of each purchase and showing the approximate purchase price of each item. The actual purchase price will be shown when known. This forecast, when passed by Manufacturing Division sub-committee, will be referred to the General Manager and later submitted to the Engineering Committee for approval. The forecast, when approved by the Engineering Committee, will be forwarded to the Budget Committee for their approval.

3. Office Furniture and Fixtures

Duplicate blank forms provided specially to record proposed purchases will be sent to the heads of the various departments. The Department Head will fill in the form, giving full details for reason for recommendation of each item, sending the original to the Budget Officer and retaining the duplicate for his records. The Budget Officer will summarize these estimates on the form provided before submitting them to the Administrative Division sub-committee.

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PURCHASING DIVISION

Plant Machinery;
Office Furniture
and Fixtures

1. The purchasing agent will be furnished a copy of the budgets (original and supplementary) for:

1. Plant Machinery
2. Office Furniture & Fixtures

The proposed date of purchase for each item will be confirmed with the Department Head before the order is placed.

Material & Supplies

2. The purchasing agent will be furnished with a copy of the Sales Budget as a guide in purchasing materials and supplies. He will purchase materials or supplies used in the regular manufacture of any product ordered on authorized requisition having ascertained that such purchases are required.

Miscellaneous
Material

3. A. The purchasing agent will be furnished a copy of the "Alterations Budgets". He will purchase materials or labor for alterations when such is ordered on authorized requisitions.
- B. The purchasing agent will issue orders to vendors for other items on receipt of properly authorized requisitions having verified that provision for such has been made in the Budget.

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SALES BUDGET

Estimate of Sales- Customers

Each salesman will be required to forecast, by lines of product, his volume of sales for a period of one year. He will be aided by the Sales Department Home Office who will supply him on the proper form the amount of actual sales made in his territory by lines of product in the two immediate previous sales analysis years. He will estimate carefully, by products, the volume of business he expects to obtain and will send his forecast to his Supervisor. The Supervisor will make such revisions to the salesman's estimate as his judgment may dictate. He will then prepare a summary of the salesman's estimate and his revised estimates to be forwarded to the General Sales Manager for consideration.

The General Sales Manager will make a recapitulation of the Supervisors' estimates, making revisions according to his experience and knowledge of conditions in the various territories, and submit the figures to Sales Division sub-committee. This estimate, when approved by the Budget Committee, will constitute the Budget of Sales to Customers. The Sales Department year ends September 30. As the greater part of shipments made in the company's fiscal year ending December 31, represent orders accepted in the sales year, the

- 9 -

Sales Department's figures of actual sales for the period can be used for guidance in forecasting sales for the next Budget period.

The Sales Manager will furnish each Supervisor with a monthly report showing, for his territorial division as a whole and by salesmen, actual results in comparison with previous years and with the Budget.

Each Supervisor will be held responsible by the Sales Manager for the attainment of his Budget. The Supervisor will confer with the individual salesmen making comparisons between actual sales figures and the salesmen's estimates.

Estimate of Sales-
Associated Companies

1. Sales Books, Register Supplies & Continuous Forms

The Treasurer will secure from the various associated companies, estimates, by lines of product, of business they will forward us for manufacture during the ensuing year.

2. Carbon

This estimate covering a period of one year will be submitted by Niagara Falls Factory Superintendent to the General Manager.

At a period sufficiently in advance of the Budget Period, the Factory Superintendent will ascertain

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from each company their anticipated requirements for ensuing year under the following captions:

1. Carbon in Rolls
2. Flat Carbon
3. Register Rolls
4. One Time Carbon
5. Carbon Dope
6. Coated Stock (automatic and typewriter)

This estimate is furnished by Niagara Falls Factory Superintendent because of his close contact with associated companies concerning this product.

SALES DIVISION

Expenses

The schedules of all expenses should be classified as to Fixed and Variable items.

The Sales Division sub-committee will approve all estimates of selling expenses before submitting them to the General Manager.

The estimates will be grouped under three headings:

1. Field Selling
2. Home Office Selling
3. Advertising

Field Selling will be estimated under three sections:

1A. Commissions & Salaries Earned & Unearned

The Sales Budget is the basis for determining this estimate. The Accounting Department will provide data for previous periods indicating the ratio of this expense account to Shipments to Customers, by lines of products. Factors which enter into the situation (and to be supplied by the Sales Manager) and of which cognizance should be taken, are:

1. Changes in salesmen's remuneration or commission arrangements.

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2. Number of new salesmen to be employed and the consequent loss to be incurred.

1B. Salaries - Supervisors

This estimate will be supplied in detail by the Sales Manager.

1C. Sales Offices Expenses

Actual expenses detailed in accordance with the chart of accounts for the two immediate previous years and for each Branch Office, will be furnished to the Sales Manager by the Accounting Department on form provided, in triplicate. The Sales Manager will forward two copies to the Branch Office Manager who will estimate the relative detailed expenses for the ensuing year. The Branch Office Manager will fill in the two forms, retaining one and returning the other to the Sales Manager, who will make any necessary revision before submitting to Sales sub-committee. When the estimate has been finally approved, a copy will be sent to the Branch Manager.

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2. Home Office Selling.

Home Office Salaries - Special Account

The Treasurer will furnish this estimate.

Home Office Salaries - Staff

Each department head will be required to review the salaries of the individuals comprising his staff and to make recommendations on the form provided.

Prizes

The estimate for this item, which includes cash and merchandise credit prizes and cost of annual Rediform Convention, will be prepared by the Advertising and Sales Managers jointly.

Travelling Expenses

An estimate will be furnished by the Sales Manager of the probable travelling expenses of each individual for the budget period.

Samples

An analysis of samples used in previous periods will be furnished by the Accounting Department under two major classifications:

1. Samples furnished Elmira Office.
2. Samples furnished salesmen.

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Analysis of each classification will be made by class of product. The Sales Manager will furnish the estimate. The development of new lines of products and the number of new salesmen engaged will influence this estimate.

Stationery and Supplies

An analysis of the cost of all forms used in previous periods will be provided by the Accounting Department. An inventory list will be made up by the Supply Department showing the number of forms on hand and the estimated time that these forms will last.

As supplies are made up or purchased in quantities to last a year and the total cost is charged to expense at time of manufacture or purchase, these factors should be considered when estimating.

Telephone and Telegraph

Sales Division will be charged with a proportion of the telephone service charge on the basis of the number of phones in the Sales Departments to the total number of phones. The Accounting Department will supply these figures. The estimate furnished by the Sales Manager will also include a

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detailed estimate of long distance calls and telegraph charges.

Postage

This estimate will be calculated by the Accounting Department and submitted to the Sales Manager for his approval.

Rediform Forum

The analysis of the cost of printing the company's house organ is the most important factor for the Advertising Manager to consider in preparing this estimate.

Errors

The Sales Manager will estimate the loss incurred through salesmen's and Home Office errors.

Register Machines Exchange

The Assistant Sales Manager in charge of Register Machines and Register Supplies will estimate this figure taking into account the trend of business, changes of policy with reference to allowances, etc.

Freight and Express

This estimate will be supplied by the Sales Manager.

Sales Office Alterations

The Sales Manager will obtain from the Head of the Maintenance Department the cost of any anticipated alterations.

Training Class Expenses

The Sales Manager will estimate the number of salesmen he plans to add to the sales force. He will estimate the travelling, hotel and other expenses that may be incurred.

Miscellaneous

The estimate of those items, which can not be allocated to a specific account, will be shown under this caption.

Customers' Discounts Allowed

The Assistant Secretary-Treasurer will supply this estimate by territorial districts.

3. Advertising

The Advertising Manager will furnish the Sales Manager with this estimate in detail according to the set-up of the chart of accounts. The approximate date of the larger expenditures should be indicated.

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ADMINISTRATION DIVISION

Expenses

The schedules of all expenses should be classified as to Fixed and Variable items.

The Administration Division sub-committee will approve all estimates of this division before submitting them to the General Manager.

Office Salaries - Executive & Department Heads

The Treasurer will furnish this estimate.

Office Salaries - Departmental

Each Department Head will be required to review the salaries of his staff and to make recommendations on the form provided. The Budget Officer will summarize the estimates provided by each Department Head.

General Executive Expense

This figure will be supplied by the Treasurer.

Legal Fees and Expense

This estimate will be supplied by the Accountant.

Bad Debts

This estimate will be submitted by supervisory districts by the head of the Credit-Collection Department who will have been previously supplied with Sales Department Budget by supervisory districts.

Collection Expense

This estimate will be submitted by the head of the Credit-Collection Department.

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Donations

This estimate will be submitted by the Treasurer after conferring with the General Manager regarding the donations it is proposed to make.

Affiliations

The Treasurer will furnish this estimate in detail.

Service Organizations

The head of the Credit-Collection Department will furnish this estimate.

Patent Expenses

This item will be estimated in two sections:

A. Head Office Charge

The Treasurer will furnish this figure.

B. Various

The Accountant will furnish this estimate.

Payments Under Agreements (Patents)

This estimate will be supplied by the Assistant Secretary-Treasurer.

Patent Litigation

This estimate will be supplied by the Treasurer.

Sales Books Manufacturers Association

This estimate will be supplied by the Accountant.

Autographic Register Manufacturers Association

This estimate will be supplied by the Accountant.

Continuous Fold Printers Association

This estimate will be supplied by the Accountant.

Special Engineering Expense

This estimate will be supplied by the Treasurer.

Research and Experimental Expense

This estimate will be supplied by the Treasurer.

Royalties Paid

This estimate will be supplied by the Accountant

Postage

This estimate will be furnished by the Accountant.

Travelling and Entertaining

The Budget Officer will summarize the estimates provided by each Department Head.

Telephone and Telegraph

The Administration Division will be charged with a proportion of the telephone service charge on the basis of the number of phones in the Administrative Departments to the total number of phones.

To this figure the Budget Officer will add the sum of the detailed estimates of long distance calls and telegraph charges provided by the head of each department.

Stationery and Supplies

An analysis of the cost of all forms used in previous periods will be provided by the Accounting Department. An inventory list will be made by the Supply Department showing the number of forms on hand and the estimated time that these forms will last.

Supplies are made up or purchased in quantities to last

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a year and the total cost is charged to expense at time of manufacture, or purchase. These factors should be considered by each department head when estimating. The Budget Officer will summarize the estimates provided by each department head.

Repairs and Supplies for Office Equipment

The Accountant will furnish this figure.

Errors

The Accountant will furnish this figure after he has taken into consideration the estimate submitted by the head of the Order Department.

Office Alterations

The Treasurer will furnish this figure, having conferred with the Department Heads removing of departments, etc.

Policy Allowance

The Assistant Treasurer will furnish this figure.

Statistical Department Expense

The head of the Statistical Department will furnish this estimate.

Miscellaneous

The estimate of those items, which can not be allocated to a specific account, will be shown under this caption. The Accountant will furnish this estimate.

MANUFACTURING DIVISION

The schedule of all expenses should be classified as to Fixed and Variable items.

The Manufacturing Division sub-committee will approve all estimates of this division before submitting them to the General Manager.

The Production Budget will be compiled in three sections:

1. Shipments to Customers.
2. Shipments to Associated Companies
3. Transfers, which represent production for Inter-Company or Inter-Department use.

The Factory Superintendent will be furnished with the estimate of monthly shipments by class of product reconciled to the monthly Sales to Customers and Associated Companies which the Budget Committee will have approved.

He will estimate the amount of transfers in two sections:

- (a) Transfers Inter-Company
- (b) Transfers Inter-Department

Transfers Inter-Company

This monthly figure will be calculated for each class of product by applying the current period to date ratio of this item to the sum of Shipments to Customers and Shipments to Associated Companies on the monthly Budget total of Shipments to Customers and Associated Companies.

Transfers Inter-
Department

This monthly figure will be the budgeted cost of materials Inter-Department.

Cost of Production
Materials

The Factory Superintendent will estimate the cost of materials used by class of products using as a basis the current ratio of cost of materials used to total production. The following factors, which influence the cost of materials, will be taken into consideration:

1. Probable revision of selling price of products. As a member of the Executive Committee he will have knowledge of any proposed change of selling prices.
2. Market prices and contract prices. This information should be obtained from the Purchasing Agent.
3. Variations in percentage of waste of material.

The Waste Control Budget will be referred to for this information. The head of the Waste Control Department will submit figures of anticipated waste and Waste Control Department wages to the Superintendent. When approved by him, this will comprise the Waste Control Budget.

Cost of Production
Materials Inter-
Department

This monthly figure will be calculated for each of

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the three classes of products - Sales Books, Register Supplies and Continuous. The current period to date percentage of cost of carbon content to the total production of each class of product will be applied on the monthly budget. This calculation will be increased or decreased by any anticipated variation in the cost of carbon.

Cost of Production
Labor

These weekly budget figures for the first thirteen weeks and monthly figures for succeeding three months will be estimated by each Department Head in conjunction with the Superintendent.

In order to insure the proper control of this very important expenditure, weekly departmental wage reports will be submitted to the Superintendent showing the ratio of actual and budget figures to total production, together with the labor figures of the corresponding week of the previous month related to total production.

Cost of Production
General Factory
Labor

This estimate will be furnished under the following headings:

1. Supervision
2. Clerks
3. Clerks Service
4. Stock Handling
5. Sweepers & Night-Watchmen

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6. Waste Control

These estimates will be submitted by the Superintendent.

This figure will be furnished by the Accountant and approved by the Treasurer.

The schedule of all expenses should be classified as to Fixed and Variable items.

Cost of Production Provision for Depreciation

Expenses

Power

The Plant Maintenance Supervisor will estimate this figure which will be approved by the Superintendent.

Light and Heat

This estimate will be furnished by the Plant Maintenance Supervisor in four sections:

1. Wages
2. Coal
3. Water
4. Light and Gas.

Repairs and Maintenance

There are three sections to this estimate, which will be submitted by the Superintendent:

1. Repairs and Maintenance to Buildings
2. Repairs and Maintenance to Plant-Wages
3. Repairs and Maintenance to Plant-Materials and Expenses.

The Plant Maintenance Supervisor will make a survey prior to the Budget period and make recommendations

to the Superintendent.

Insurance and Taxes

The Accounting Department will submit this estimate.

Travelling Expenses

An estimate will be furnished by the Superintendent of the travelling expenses of each individual for the Budget period.

Postage

This estimate will be calculated by the Accounting Department and submitted to the Factory Superintendent for his approval.

Freight, Express and Cartage

This estimate will be calculated by the Accounting Department and submitted to the Factory Superintendent for his approval.

Errors

The Factory Superintendent will furnish this estimate by operating departments.

Factory Alterations

The Superintendent will estimate this figure, having learned from the foremen their views regarding improvements or economies to be effected by contemplated changes.

General Factory Expenses

Under the above heading are grouped several expense accounts:

Telephone and Telegraph

The factory is charged with the proportion of the service charge on the basis of the number of phones in the factory to the total number of phones in the plant. To this figure the Superintendent will add the detailed estimate of long distance calls and telegraph charges.

Workmen's Compensation

This estimate will be furnished by the Accounting Department.

Stationery and Supplies

The Factory Superintendent will supply this estimate. An analysis of the cost of all forms used in previous periods will be prepared by the Accounting Department. An inventory list will be made by the Supply Department showing the number of forms on hand and the estimated time that the forms will last.

Supplies are made up or purchased in quantities to last a year and the total cost is charged to expense at time of manufacture or purchase.

Ice

This estimate will be calculated by the Accounting Department and submitted to the Factory Superintendent for his approval.

Miscellaneous

The estimate of those items which can not be allocated

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to a specific account will be shown under this caption.

Supplies

The Factory Superintendent will estimate this item by sections - Composing Department, Stereotype Department, Electrical, Rollers and General Supplies.

A C K N O W L E D G M E N T

The Policyholders' Service Bureau wishes to express its appreciation to Mr. H. P. Brown, Treasurer of the American Sales Book Company, Ltd. for permission to reproduce the Manual of Budget Procedure.

X X X

The Manual of Budget Procedure was referred to briefly in a recent report of the Policyholders' Service Bureau, "Budgeting Manufacturing Operations". Copies of the report are available to those interested in this phase of operating control.

AN ECONOMIC SERVICE TO BUSINESS

This is one of numerous publications issued by the Policyholders Service Bureau in the interest of better management in business. The Metropolitan has good reason for desiring to contribute, so far as practicable, to improved practices in management. Effective management is a vital factor in the continuous and profitable operation of business enterprises and helps to bring about steady work and regular income for Metropolitan policyholders, who number more than one out of five of the general population. An even greater proportion than one-fifth of the employees in commerce and industry are insured by the Metropolitan Life Insurance Company. The relationship between prosperous policyholders and the company's progress is obvious.

Because of its great stake in the nation's economic life, the company has set up the Policyholders Service Bureau to carry out a program of economic service to business. The Bureau staff is made up of specialists in the various fields of management -- in business organization, office management, accounting and finance; in marketing, distribution, advertising and sales management; in production and personnel management; in business and economic research; in industrial health and accident prevention.

Investigations of subjects of current interest to business executives are continually being carried on by the Bureau's specialists in these various fields of management. Reports of such of these investigations as are of general interest are published from time to time. For additional information about the work of the Bureau or its published reports, address:

Policyholders Service Bureau
Metropolitan Life Insurance Company
One Madison Avenue
New York City

THE MANUFACTURING EXPENSE BUDGET

Policyholders Service Bureau
METROPOLITAN LIFE INSURANCE COMPANY

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The Manufacturing Expense Budget



POLICYHOLDERS SERVICE BUREAU
METROPOLITAN LIFE INSURANCE COMPANY
HOME OFFICE—NEW YORK
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AN ECONOMIC SERVICE TO BUSINESS

THIS is one of many publications issued by the Policyholders Service Bureau in the interest of better management in business. The Metropolitan has good reason for desiring to contribute to improved practice in management. It is because this has a direct bearing on the economic well-being of its policyholders. More than one person in every five of the general population—an average of about one in every family—is a Metropolitan policyholder. An even greater proportion of employees in commerce and industry are insured by the Company.

Because of its great stake in the Nation's economic life, the Company maintains the Policyholders Service Bureau to carry out a program of economic services to business. The Bureau staff is made up of specialists in the various fields of management—in business organization; office management; accounting and finance; in marketing, distribution, advertising and sales management; in production and personnel management; in business and economic research; in industrial health and accident prevention.

Under the direction of these specialists, investigations of subjects of current interest to business executives are being conducted continuously. The results of those investigations which are of general interest are published from time to time. A complete list of several hundred reports issued by the Bureau and available for distribution is given in the *Index of Economic Reports*. Copies of this may be secured on request. Address:

POLICYHOLDERS SERVICE BUREAU
METROPOLITAN LIFE INSURANCE COMPANY
ONE MADISON AVENUE, NEW YORK, N. Y.

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This report is one of four, devoted to the application of budgeting to manufacturing operations. Titles of the others are as follows:

1. *Budgeting Manufacturing Operations.*
Outlines and illustrates the fundamental practices of industrial organizations in developing and administering the manufacturing budget.
2. *The Bonus and the Budget.*
Presents the methods and results of using incentive systems for securing budget accomplishment.
3. *The Budget Manual.*
Describes the procedure used by an organization in the introduction and maintenance of the budget.

THE MANUFACTURING EXPENSE BUDGET

Part I

THE PROBLEM OF MANUFACTURING EXPENSE CONTROL

ONE OF THE more effective instruments developed for controlling manufacturing expense is the budget. Properly designed and carefully administered, a budget system permits preparation of company and departmental programs of expense, and makes possible the exercise of control through comparison of actual results with budgeted expectations. Control of manufacturing expense becomes increasingly necessary during periods of low business activity.

This report is based on the budgetary practices of many industrial organizations. The several types of budget used for control of manufacturing expense are described and illustrated, and the complete procedures of four companies are outlined in some detail.

The manufacturing expense budget often has been the starting point in the evolution of a complete system of budgetary control. It is frequently the case that, after budgetary procedure has demonstrated its effectiveness as a control over manufacturing expense, this system of control is extended to include every item of expense appearing in the profit and

loss statement. Companies manufacturing to customers' specifications find it difficult to prepare estimates of labor and material costs due to the lack of an accurate method for forecasting sales, but in the budget of manufacturing expenses, based on past operating records, they are afforded an excellent means of control over this important portion of plant costs. In like manner, companies manufacturing to stock find in the manufacturing expense budget an effective control over departmental expenses.

Each item of manufacturing expense exhibits an individual relationship to production volume. Certain expense items are unaffected by any change in the manufacturing activities of the plant, others are partially or indirectly affected, while the remaining items increase or decrease in direct proportion to the rise and fall in production volume. The preparation of the manufacturing expense budget, therefore, presents the problem of reconciling these variations so that the composite picture shown in the budget gives due weight to each item of expense.

TYPES OF MANUFACTURING EXPENSE BUDGET

MANUFACTURING expense budgets can be classified under two heads:

1. Budgets prepared without the use of sales forecasts or estimates and based on past experience and standards.
2. Budgets based upon the volume of production as determined from sales estimates.

Budgets Prepared Without the Use of Sales Estimates

Some companies find it impracticable, if not impossible, to make satisfactory estimates of anticipated sales. The companies in this group either produce largely to customers' specification or are engaged in the fabrication of goods which are directly influenced by

style changes. Under such conditions, the budget of manufacturing expense usually is based on past experience, or is set up in conjunction with a standard cost system.

In preparing the budget based solely on average or normal past experience, it is customary to analyze the overhead expenses of the company as a whole, together with those of each department, and set up a budget allowance for each item based on the average of past years or based on what can be considered a normal year. These allowances are divided into monthly operating budgets and the actual expense incurred during the month is compared with the budget figures. While such procedure is necessarily crude, it is advantageous in that it instructs the management in the use of a budget as an instrument of executive control, so that, as the company's budgeting experience increases, it will be better prepared to adopt one of the more accurate systems of budgeting.

Use of Standard Costs in Budgeting Manufacturing Expense

Several companies whose budgetary practices were reviewed in the preparation of this report utilize standard costs in conjunction with the operation of the budget system. The standard cost of a product is that cost which is based on definite specifications with a fixed allowance, expressed in terms of dollars, for labor, material, and overhead. By applying the elemental standard costs to the estimated production for the budget period, the budget allowances for the period are obtained.

When the various items of standard cost are prepared on a basis of average or normal production, it is evident that the resulting budget will be expressed also in terms of average or normal conditions. If, however, the standards are adjusted to represent, as nearly as possible, actual existing conditions, or conditions to be expected during the coming budget period, then the resulting budget will be expressly for those conditions.

The standard burden rate represents the unit standard cost for the many items of over-

head expense which cannot be allocated definitely to the various products and processes. In the preparation and use of standard burden rates there are notable differences in opinion and practice. These differences appear not only in the accounting methods used for overhead distribution, but in the determination of what standard distribution should represent.

The determination of standard burden rates is dependent, of course, on the method of burden distribution in use. Without attempting to discuss the principles and methods employed in determining the correct procedure of burden distribution for any organization, the following lists the more prominent methods:

1. Percentage on Labor Costs
2. Percentage on Material Costs
3. Percentage on Labor Hours
4. By Department
5. By Classes of Product
6. By Department by Classes of Product
7. Machine Hour Rate
8. By Production Centers

The differences in accounting opinion and practice, shown by the many methods of burden distribution in use, are illustrated further by the fact that there is no commonly accepted method of applying the standard burden rate. For example, the standard burden rates of some companies represent the average of burden rates over a period of years; in certain other organizations the standard burden rate represents the distribution of burden for a normal year or period of production; still other companies adjust their burden rates periodically so that the standard represents, as closely as possible, current existing conditions; while still others base their rates on estimated future production and costs for the period in question.

The basic difference of opinion among the adherents to the average or normal methods of calculating standard burden rates and those advocating either the actual or estimated method, is the desirability of allocating all the overhead expenses of a period

to the products manufactured during that period.

Manufacturing expense budgets prepared without the use of sales estimates, and in those organizations operating a standard cost system, are computed by applying the various standard burden rates to the actual production. Under such a plan, the budget is limited to a comparison of these standard expenses with actual expense after the production period is over, as no budget set-up can be prepared previous to the production period without some estimate of what production will be.

Several companies which have found it impossible to forecast sales have designed a budget plan whereby normal expense can be adjusted to any level of production, thereby enabling the management to compare actual performance with a scientific estimate of

what the expense should have been for the volume of production obtained. Although such a plan is also usually limited to a comparison of actual to budget performance at the completion of the production period, for those executives who desire a comparison of actual performance to what it should have been under the existing conditions, it offers an advantage over the use of standard burden rates based on normal or average production. On the other hand, for those who desire a comparison of actual to normal performance, the standard cost plan is considered more advantageous.

The use of a manufacturing expense budget adjusted to actual conditions, and in an organization whose products are made to customers' specifications, is illustrated in Part II in the procedure of the Doehler Die Casting Company of New York, N. Y.

BUDGETS PREPARED FROM SALES ESTIMATES

WHEN SALES ESTIMATES are available, manufacturing expense budgets are usually set up in one of three ways: in conjunction with a standard cost system; on the basis of departmental or account estimates; on the basis of normal departmental or standard unit costs adjusted to conform to anticipated conditions.

One of the major differences among these variations in manufacturing expense budgets is the manner in which sales estimates are used. In general, those budgets which set standards or allowances based on estimated plant activity are prepared for the purpose of comparing actual performance with a scientific estimate of what that performance should be for the conditions existing during the period under consideration. Budgets which are made up without reference to anticipated conditions are primarily for the purpose of comparing actual conditions with normal.

Use of Sales Estimates and Standard Costs in Budgeting Manufacturing Expense

The preparation of a manufacturing expense budget, in which normal or average

standard costs are used in conjunction with sales estimates, is similar to the method described in a previous section. It has one additional feature, however, which is of value for control purposes. Through the use of a sales estimate a production schedule can be established, and application of the standard burden rates to the goods called for on the production schedule will permit the compilation of a manufacturing expense budget prior to the start of the budget period. Such a budget is most helpful as an expense guide to the plant management during the period, since remedial measures can be taken at the first sign that costs are going beyond the established limits.

Many companies prepare the manufacturing expense budgets by accounts or departments, making direct reference to the production schedule as obtained from the sales estimate. The procedure of the Norton Company of Worcester, Mass., is illustrative of this method.

Previous reference has been made to the fact that certain companies calculate their standard burden rates after the compilation of the annual manufacturing expense budget.

This practice is followed by C. G. Conn, Ltd., of Elkhart, Ind., and the standard burden rates are calculated in the following manner: The estimated amount of productive labor for the year is determined by application of the piece rates to the products called for on the production schedule. The estimated manufacturing expense for each department is added to the general factory

expense estimate for the year, resulting in an estimate of total factory overhead for the year. This total, divided by the total productive labor for the year, gives the amount of overhead to be applied per dollar of productive labor. The percentage thus determined constitutes the burden rate for the fiscal year and is used as such in preparing the standard cost.

PREPARATION AND ADMINISTRATION OF THE MANUFACTURING EXPENSE BUDGET

IT IS COMMON PRACTICE to have the original manufacturing expense budget estimates prepared by the cost or accounting department since this organization has available all the necessary data. The final budget figures, however, are arrived at in many diversified ways. Practice varies from that of having each department head who is in a position to control expense, submit an estimate of those expenses over which he has control (or approve the estimate of the accounting department) to the other extreme whereby the accounting department, through the treasurer, secretary, or controller, has complete authority in preparing and administering the entire company budget.

The budget procedure of C. G. Conn, Ltd., illustrates the first plan. It is the practice of this company to have the cost department analyze all the expense accounts as to expenditures of the past year. From this analysis an average expense per accounting period is computed and sent to the foremen. They, in turn, prepare an estimate of the

expense necessary for the operations of their departments for the next period. The cost department's analysis and the foremen's estimates are then reviewed item for item in a conference of the factory manager, the superintendent, the cost accountant, and the department foreman. In this conference all contemplated changes for the next budget period are considered and a standard expense schedule is set up which is to remain intact for the budget period.

Another plan for the administration and preparation of the manufacturing expense budget is shown in the procedure used by Canada Dry Ginger Ale, Incorporated, of New York, N. Y. The entire Factory Burden Budget for all the plants of this company is prepared, administered, and controlled by the treasurer's department. The three labor payroll budgets, direct labor, indirect labor, and supervision, are also prepared and administered by the treasurer's department on information furnished by the Central Production Department.

ORGANIZATION OF THE MANUFACTURING EXPENSE BUDGET

BUDGET PREPARATION usually follows the plan of classification of accounts that appears in the factory ledgers. This procedure simplifies the work of the accounting department in the preparation of estimates, in the compilation of actual expense, and in the comparison of actual performance to budget estimates.

There are two basic types of overhead budget used by manufacturing establishments, each of which, however, is built up by accounts. The first type is prepared for the manufacturing department as a whole and is constructed of major accounts. Such a budget is used by The Jeffrey Manufacturing Company, manufacturers of elevating and

conveying equipment, whose budget of factory expense is shown below in Figure 1. (Figures shown for accounts are fictitious.) In this budget no reference is made to the manufacturing department subdivisions, each item of expense being accounted for and budgeted for the plant as a whole.

This procedure is modified somewhat by several companies. Certain organizations operating several plants throughout the country prepare individual expense budgets for each plant, while others, manufacturing a diversified line of products in separate divisions, prepare manufacturing expense budgets for the manufacturing department as a whole, broken down by product divisions.

The other basic type of manufacturing expense budget consists of an individual budget by accounts for each unit in the manufacturing department. This departmentalized manufacturing expense budget is illustrated in the practices of the Doehler Die Casting Company and the Norton Company whose budgetary procedures are described in detail in Part II of this report.

There are two distinct procedures used in developing the departmentalized manufacturing expense budget. One calls for the preparation of individual budgets for each unit in the manufacturing department as well as a budget of general expense for all items of expense which are not directly under the

THE JEFFREY MANUFACTURING COMPANY FACTORY EXPENSE				
	Budget This Month	Expense This Month	Budget To Date	Expense To Date
Reserve for Depreciation, Taxes and Insurance.....	\$7,500			
Foremen.....	8,000			
Repair Machinery.....	1,500			
Tool Supplies.....	9,000			
Power.....	22,500			
Defective Workmanship.....	1,050			
Non-Productive Labor.....	8,500			
Expense Material.....	1,000			
Maintenance.....	4,000			
Repair Buildings.....	3,000			
General Superintendence.....	4,000			
General Factory Expense.....	6,300			
Time and Cost.....	4,300			
Production.....	4,000			
Employment.....	800			
Rate Department.....	1,750			
Special Factory Expense.....	1,350			
Hospital.....	700			
Repair to Patterns.....	2,000			
Defective Material.....	1,500			
Inspection.....	4,500			
Yard Truck.....	2,000			
Pattern Storage.....	1,000			
Stores Physical.....	10,250			
Shipping.....	12,500			
TOTAL.....	\$123,000			

FIGURE 1—Budget of Factory Expense

control of the unit heads; the other uses individual budgets for each unit with no budget for general expenses, these being prorated to the various units and shown on their budgets. An illustration of the first procedure is given in Part II in the budgetary practices of The Fairbanks Company and the second procedure is illustrated by the Doehler Die Casting Company's budget system.

There is no common practice as to the budgeting of service or of non-productive departments. In some companies this type of

expense is prorated to the various manufacturing units and appears in their budgets, while in others special budgets are prepared for these departments. Thus, all the service departments of Eli Lilly and Company, Indianapolis, Ind., including such units as the boiler and engine room, machine shop, hospital, and laundry, are budgeted for labor, salaries, supplies, fixed and prorated charges. The service expenses of C. G. Conn, Ltd., are included in the budget of General Expense.

SECURING BUDGET ACCOMPLISHMENT

CONTROL THROUGH THE USE of a budget system is based on the comparison of actual results with budget estimates. Comparison is accomplished through periodical reports of the actual costs of operation arranged in a column parallel to that containing the budget estimates, using the same classification of accounts in both columns. These reports usually contain additional columns for recording the variations between actual costs and budget estimates, expressed either in terms of dollars or percentages, and columns

*See *The Bonus and the Budget*, a report prepared by the Policyholders Service Bureau.

for comparison of actual accomplishment and budget estimates for the year to date.

Many companies have found it profitable to introduce a wage incentive plan for foremen and department heads in conjunction with the manufacturing expense budget.* The incentive plan provides for the distribution to each foreman and department head of a percentage of any savings when actual expense falls below the budget standards. The methods of distribution vary from monthly cash payments, the use of savings accounts, etc., to the distribution of stock.

Part II

PRACTICES OF FOUR REPRESENTATIVE COMPANIES

THE COMPLETE PROCEDURES of four companies for budgeting manufacturing expense are presented in this section of the report to illustrate typical systems. The first, that of the Doehler Die Casting Company, describes the budgeting procedure in a company whose products are made to customers' specification and order. It outlines the manner in which budget normals can be adjusted to actual production.

The second procedure shows the method of the American Sales Book Company in preparing its volume of production and the cost of production budget. The plan illustrates the preparation of departmental cost

estimates based on estimated volume of production.

The budget system of the Norton Company, the third procedure given, also illustrates a method of preparing departmental expense budgets. In addition, this system describes a method for adjusting production and expense estimates to correspond with actual production.

The use of flexible forecasts in comparing actual and budgeted expense at actual and estimated production is illustrated in the fourth example, the budget procedure of The Fairbanks Company.

Doehler Die Casting Company

THE BUSINESS of the Doehler Die Casting Company is affected by periodic fluctuations in each of its principal products due to such causes as new inventions, new models and seasonal variations, and also to the fact that all products are manufactured to customers' specifications. Therefore, only the overhead expenses of the various manufacturing departments are budgeted, although all productive labor costs are controlled carefully by wage incentives.

Budget Normals

All budgets of this company are based on normals with provision made for adjusting these normals to actual production. In establishing normals, records and statistics over a period of years were studied and analyzed to determine the normal monthly production in terms of productive hours per month, per department. For example, the records of the department whose budget is illustrated in Figure 2, page 13, show that over a period of three years this department averaged four thousand productive hours per month. This figure, therefore, is taken as a normal pro-

duction of the department and is used as such in preparing the budget for manufacturing expense.

All the detailed overhead expenses, including controllable, prorated, and fixed, were also studied and analyzed for the same period, and normals established for each item. These normal expenses, however, are not pure averages, but represent the result of adjustments to take care of certain decreases in cost due to the introduction of manufacturing economies.

Rates of Variability

A further study of production results demonstrated that actual production may vary from the normal as much as 50 per cent in either direction. To provide for these variations, a statistical study was made to determine the amount of variation for each item of cost as production varied from the normal. This study resulted in the establishment of rates of variability, these rates showing a percentage increase or decrease for each item of cost from its normal for each percentage increase or decrease of production

from its normal. For example, in the department whose expense accounts are illustrated, for each 1 per cent increase in production hours above the normal, the allowance for equipment maintenance expense is increased 0.85 per cent, while a 1 per cent decrease in production results in an 0.85 per cent decrease in equipment maintenance expense.

The Doehler Die Casting Company operates several plants scattered throughout the country. Due to the differences in location and to the different types of construction and equipment of these plants, it is recognized that the rates of variability for the several plants might not be the same. For that reason, at the annual conference of plant managers, the rates of variability are discussed, and with the recommendations of the plant executives in mind, the treasurer of the company establishes rates which will represent as nearly as possible a correct composite figure.

In addition to the annual scrutiny of rates of variability, all normals and rates are checked monthly by the management so that any basic changes in conditions will be incorporated immediately in the budget figures.

Budgetary Organization

All budgeting activities are under the control of the treasurer who is located at the New York headquarters of the company. He employs a cost and clerical staff of five which records all cost data as it is received from the plants, and prepares the monthly budget comparisons, balance sheet and profit and loss statement each month. A cost accountant employing a staff of two or three clerks is located at each plant. It is his duty to gather all cost data, prepare the weekly factory budget comparisons, and supervise all cost work at the plant. He is directly responsible to the treasurer at New York.

Budget Procedure

The first step in the budget procedure is the preparation of weekly budget schedules for each department for various volumes of production. For example, for the department

illustrated in Figure 2, page 13, a schedule would be prepared showing the weekly budget for a monthly production of 2,500, 3,000, 3,500, 4,000, 4,500, 5,000 and 5,500 hours, as well as for the normal production of 4,000 hours. This schedule is, of course, prepared from the basic budget for 4,000 hours, using the rates of variability described in the foregoing paragraph. Since the department foreman is able to determine the number of hours which his department will be required to operate the following week, he can, by using this schedule as a guide, plan in advance any changes necessary to keep his expenses in line with the budget. The weekly budgets include only the expense accounts under the two general heads of non-productive labor and supplies. Prorated expense and fixed charges are not included. These schedules are permanent unless a change is necessitated by improvements in factory procedure or equipment.

The several plants of the Doehler Die Casting Company operate on a five-day week, ending on Tuesday. On Friday, each foreman, as well as the superintendents and plant manager, receives from the plant accountant a report comparing actual results with the budget for the week ending the previous Tuesday. These budget reports show a comparison of actual expense against the original estimate for normal production as well as a comparison of actual results to the adjusted budget, this adjustment being made for the purpose of eliminating the differences between actual and normal production. Every Saturday morning the plant manager calls a meeting of foremen and superintendents and, in this meeting, the budget figures are discussed and definite measures taken to assure the attainment of the budget for those items which are shown to be out of line in the present report.

Monthly Budget Comparison

The monthly comparison of budget and actual expense is prepared by the treasurer's office at New York. This comprises an eighty-five page report in which the various

DEPARTMENT FOREMAN	EXPENSE ANALYSIS YEAR										DECEMBER	12 MONTHS TOTAL	MONTHLY AVERAGE
	EXPENSE ACCOUNTS	ESTIMATED BASIS	% VARI- ABILITY	% TO TOTAL	JANUARY		FEBRUARY		MAR				
					ADJ. BUDGET	ACTUAL EXP.	ADJ. BUDGET	ACTUAL EXP.					
	<u>Non-Prod. Wages</u>												
	Foreman	433	-		433		433						
	Supervisors	400	80		560		320						
	Die Maintenance	1250	100		1875		938						
	Equipment Maintenance	417	85		594		328						
	Clerk	125	50		156		109						
	Dimount & Reset for Repairs	175	100		263		131						
	Total Non-Prod. Wages	2800	77.2		3881		2259						
	Rate per Hour	70¢			64.7¢		75.3¢						
	<u>Supplies</u>												
	Die Maintenance Supplies	25	100		38		19						
	Equip. "	325	85		463		256						
	Pots	250	100		375		188						
	Goggles	400	100		600		300						
	Gloves	100	100		150		75						
	Nozzles	100	100		150		75						
	Total Supplies	1200	95.9		1776		913						
	Rate per Hour	30¢			29.6¢		30.4¢						
	<u>Shares</u>												
	Power	110	50		138		96						
	Compressor	490	20		539		466						
	Total Shares	600	25.5		677		562						
	Rate per Hour	15¢			11.3¢		18.7¢						
	<u>Fixed Charges</u>												
	Depreciation	534			534		534						
	Insurance	11			11		11						
	Tax	55			55		55						
	Total Fixed Charges	600			600		600						
	Rate per Hour	15¢			10¢		20¢						
	<u>Grand Total</u>	5200	66.7		6934		4334						
	Productive Hours	4000			6000		3000						
	Rate per Hour	\$1.30			\$1.156		\$1.444						
	Variance in Production				Inc. 50%		Dec. 25%						

FIGURE 2—Expense Analysis and Budget Comparison

departments of all plants are compared and their expenses analyzed. In addition to the items on the non-productive wages and supplies which appear on the departmental weekly budgets, the productive departments' monthly budgets include fixed and prorated charges. The figures appearing on this monthly comparison are the budget, adjusted for actual production, compared with actual expenditures. In addition to this comparison, an analysis is made by class of product. Plant profit and loss is also included in this report.

An example of a departmental monthly budget report is illustrated above in Figure 2. The figures given in the illustration are fictitious, but they will serve to illustrate the procedure in use. The budget has been set up for a monthly production of 4,000 hours, which was the average production expected during the year. In January, the actual production was 6,000 hours, or an increase of 50

per cent above the expected production. Therefore, the expenses which increased in direct ratio to production (those marked 100 per cent variability) are expected to increase 50 per cent over the original budget. The other items are not expected to increase in direct ratio to production, but only to the extent of the rate of variability shown.

For example, the item of compressor expense shows a variability factor of 20, and it is expected, therefore, that this item of expense will only increase 20 per cent of 50 per cent, or 10 per cent. The items of depreciation, insurance and taxes, have a zero rate of variability and, therefore, remain fixed regardless of the volume of production.

In February, the example shows that the actual production was 3,000 hours, or 25 per cent below the expected production. The items with a rate of 100 per cent variability show a decrease of 25 per cent from the

original budget. However, the item of power, for example, shows a rate of variability of 50 per cent, and it is expected that the power cost will drop only 50 per cent of 25 per cent, or 12.5 per cent.

The rate of \$1.30 per hour is the standard burden rate for the department illustrated and for the year under consideration. The differences between the adjusted budget and the absorbed burden (actual hours multiplied by \$1.30) are transferred to Reserve for Unabsorbed Burden Accounts since they represent losses and gains due to actual production being less or greater than the budgeted production. Debits accumulating in this account during months when actual production is less than budgeted are expected to be offset by credits during months when it exceeds the budget. Differences between the actual expenses and the adjusted budget are taken into operating results for the month.

The monthly budget comparison prepared by the treasurer includes the adjusted budget figures and actual expenses for all departments and for all plants. The monthly budget comparison also contains cumulative figures for the year to date. A copy of this is submitted to each plant manager so that he may compare his performance with that of the other plants.

American Sales Book Company, Ltd.

THE MANUFACTURING DIVISION of the American Sales Book Company, Ltd. (Elmira, N. Y.) is budgeted under two headings, the first in terms of products called the Production Budget and the second in terms of cost called the Cost of Production Budget. Each of these two budgets must be approved by the manufacturing division sub-committee of the Budget Committee before being submitted to the general manager for inclusion in the company's over-all budget.

Production Budget

The Production Budget is compiled in three sections:

1. Shipments to customers.

Incentive Plan Based on Budget Accomplishment

An incentive plan for foremen is a part of the budget system of this company. Each foreman is paid a bonus based on two factors, one being his efficiency in respect to keeping within the budget allowance, the other being his efficiency of operation. For example, the foremen in the shipping departments are paid a bonus which depends on keeping expenses for non-productive labor and supplies below the budget figures which have been adjusted to actual production, and also on the unit cost of shipping per \$100 value of goods shipped. The bonuses of the foremen in the die casting department are figured on the basis of keeping actual costs within the limits set by the adjusted budget, and, in addition, by the efficiency of the die casting operators. For figuring this last item on each job sent through the die casting room, machine standards are determined by time studies. These standards are expressed in cuts per hour and the efficiency of the operator is determined by dividing his average number of cuts per hour on that job by the predetermined standard cuts per hour. The efficiency of the foreman is the composite efficiency of all operators under his jurisdiction.

2. Shipments to associated companies.
3. Transfers, which represent production for Intra-Company or Inter-Department use.

For the preparation of the Production Budget, the factory superintendent is furnished with the estimate, approved by the Budget Committee, of monthly shipments by class of production, and based on the monthly sales to customers and associated companies. The superintendent estimates the amount of transfers of products within the company by the two major divisions:

- (a) Transfers Intra-Company.
- (b) Transfers Inter-Department.

The two items, Transfers Intra-Company and Transfers Inter-Department, are calculated for each class of product by applying the current period ratio of these items to the sum of shipments to customers and shipments to associated companies, as shown on the monthly budget total of shipments.

Cost of Production Budget

The estimates used in the Cost of Production Budget are prepared by several methods and by several individuals as illustrated in the following items.

1. MATERIALS

The factory superintendent estimates the cost of materials used by class of product, taking as a basis the current ratio of cost of materials used to the value of total production. The following factors, which influence the cost of materials, are considered:

1. Probable revision of selling price of products. (*The factory superintendent as a member of the executive committee will have knowledge of any proposed change in selling prices.*)
2. Market and contract prices. (*This information is obtained from the purchasing agent.*)
3. Variations in percentage of waste of material.

2. WASTE

An interesting feature of the budget program, as carried out by the American Sales Book Company, is the use of a Waste Control Budget. This budget is prepared by the head of the Waste Control Department who submits to the superintendent figures of anticipated waste and Waste Control Department wages. When approved by the superintendent, these estimates constitute the Waste Control Budget.

3. INTER-DEPARTMENT MATERIALS

The Cost of Production Budget includes a figure for Inter-Department materials. This monthly figure is calculated by the factory superintendent for each of the three classes of product—sales books, register supplies, and

continuous forms. As an example, the current period percentage of cost of carbon content to the total production of each class of product is applied to the monthly budget. This calculation is increased or decreased by any anticipated variation in the cost of carbon.

4. LABOR

The Cost of Production Budget includes an estimate for direct manufacturing labor. In making this estimate, the weekly budget figures for the first thirteen weeks and monthly figures for the succeeding three months are estimated by each department head in consultation with the superintendent. To insure the proper control of this class of expense, weekly departmental wage reports are submitted to the superintendent. They show the ratio of actual and budget figures together with the labor figures of the corresponding week of the previous month.

General factory labor is budgeted under the following headings:

1. Supervision
2. Clerks
3. Clerks' service
4. Stock handling
5. Sweepers and night watchmen
6. Waste control

The estimates for these items are made by the superintendent and submitted to the manufacturing division sub-committee for inclusion in the budget.

5. DEPRECIATION

The budget allowance for depreciation is furnished by the accountant and approved by the treasurer before inclusion in the Cost of Production Budget.

6. POWER, HEAT AND LIGHT

The expense for power is estimated by the plant maintenance supervisor and approved by the superintendent before it is submitted to the manufacturing division sub-committee. Estimates for light and heat are also furnished by the plant maintenance supervisor under the following headings:

1. Wages
2. Coal
3. Water
4. Light and gas

7. REPAIRS AND MAINTENANCE

In preparing the Budget for Repairs and Maintenance, the plant maintenance supervisor makes a survey prior to the budget period and presents his recommendations to the superintendent who then prepares the Budget in three sections:

1. Repairs and maintenance to buildings
2. Repairs and maintenance to plant; wages
3. Repairs and maintenance to plant; materials and expenses

8. TRANSPORTATION, INSURANCE AND TAXES

The budget figures for freight, express and cartage, postage, insurance and taxes are calculated by the accounting department and submitted to the factory superintendent for his approval.

The budget figure for traveling expense is prepared by the superintendent who makes an estimate of the traveling expenses incurred by each individual for the coming budget period. The factory superintendent also furnishes an estimate, by operating departments, of manufacturing errors chargeable to that department.

9. FACTORY ALTERATIONS

Prior to the budget period, the superintendent, in a conference with the foremen, obtains their views regarding improvements or economies to be effected by contemplated changes and factory alterations. As a result of this conference, the superintendent prepares an estimate for factory alterations.

Norton Company

THE NORTON COMPANY of Worcester, Mass., in building its budget system, realized that variations between actual and budget performance fell into two classes—(1) differences due to the variation of actual sales and,

10. TELEPHONE AND TELEGRAPH EXPENSE

The factory is charged with the proportion of the service charge for telephone and telegraph expense on the basis of the number of phones in the factory to the total number of phones in the plant. To this figure the superintendent adds a detailed estimate of long distance calls and telegraph charges.

11. STATIONERY AND SUPPLIES

The factory superintendent also supplies an estimate for stationery and supplies. For the preparation of this estimate, an analysis of the cost of all forms used in previous periods is prepared by the accounting department. An inventory list is also made up by the supply department showing the number of forms on hand and the estimated time that the forms will last. Supplies are made up or purchased in quantities sufficient to last a year and the total cost is charged to expense at the time of manufacture or purchase.

The factory superintendent also prepares an estimate of manufacturing supplies under the following sections:

1. Composing department
2. Stereotype department
3. Electrical
4. Rollers
5. General factory supplies

12. MISCELLANEOUS EXPENSES

The accounting department prepares an estimate of workmen's compensation expense which is submitted to the factory superintendent for his approval before inclusion in the Cost of Production Budget.

An estimate of those items which cannot be allocated to a specific account is prepared under the caption "Miscellaneous."

Preparation of Budget Standards

In setting up the budget standards, the Norton Company made an intensive and detailed analysis of all expense accounts carried on the company's ledgers. The analysis consisted of comparing, over a period of years, the expense shown by the accounts of each productive manufacturing department with the production of that department. The expense accounts of non-productive manufacturing service departments were compared with total plant production, while sales were the basis in the administrative and sales departments.

This information was plotted on graphs, one for each expense account, the abscissa or horizontal side of the graph representing production or sales, while the ordinate or vertical side of the graph was the actual expense for the account. Through the points thus plotted, a curve was drawn, this curve being in the form of a straight line, hyperbola, or broken line, depending on the character of the

account. For example, the productive labor curve of a manufacturing department would be a straight line, similar to Figure 3, below, since the labor cost varies almost directly with production. Curves for depreciation, taxes, insurance and similar fixed items, would be straight lines, parallel to the abscissa, since these expenses are practically constant at any and all levels of production volume. Curves for department supervision and clerical expense would be similar to that shown in Figure 4, page 18, since this item of expense is affected only partly by changes in production volume. Thus the curves, one of which has been prepared for each expense account, actually represent standard costs for that account at all levels of production volume.

With the standard labor and overhead costs prepared in this manner for any amount of production, and with material standards set by means of standard material specifications, the compilation of the manufacturing budget is relatively simple.

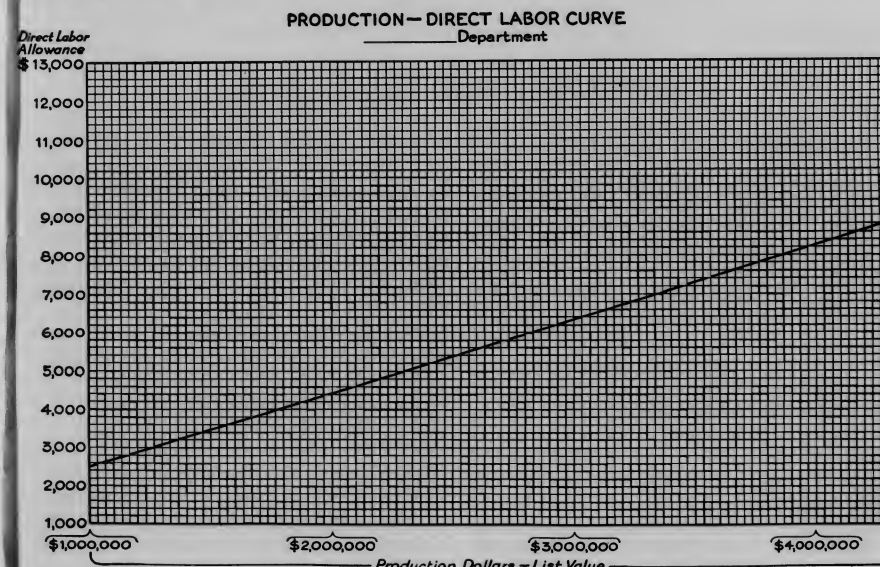


FIGURE 3—Direct Labor Allowance for Varying Volumes of Production

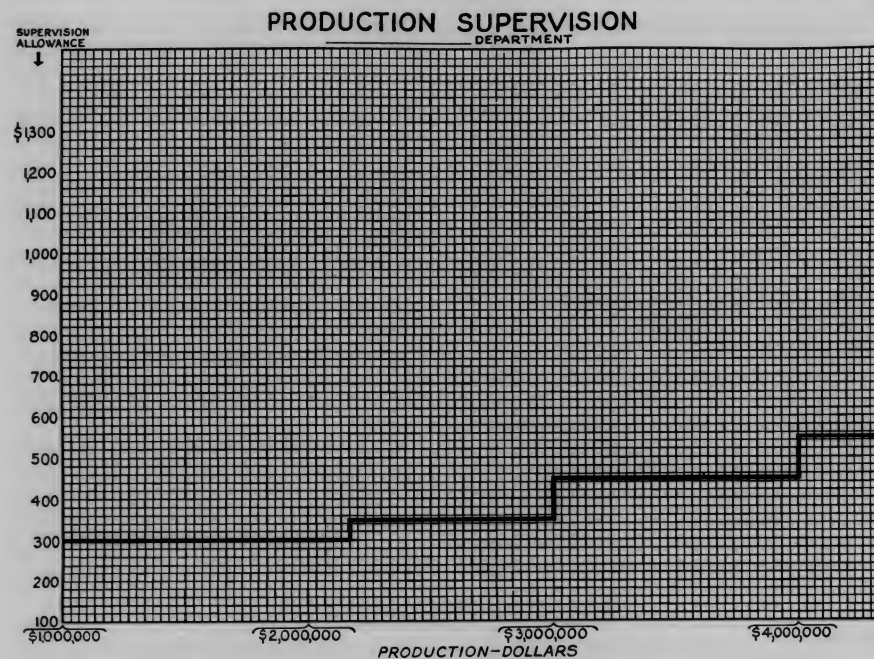


FIGURE 4—Allowance for supervision at different production levels

Sales Estimates Basis of Budget

The manufacturing budgets are based on estimates of sales. Since the greater part of the Norton Company's business is in products made to customers' specifications, the sales estimate is not prepared in terms of units of product. Sales estimates are made by the use of business forecasts, sales statistics and past experience, and are prepared by product classes. Certain standard items, however, are budgeted in terms of units of product and, when adjusted to inventories, this estimate becomes the production schedule for those items.

Preparation of the Budget

After the sales estimate has been submitted and approved, the budget officer prepares the manufacturing budgets, using as his

base the amount of production allotted to each department. By referring to the graphs, he determines for each department the amount of expense, by account, which is standard for the scheduled production. Drawing off these figures, he assembles them on a form, account by account in each department, and this form becomes that department's budget. Additional allowances on some accounts are made over the standard when it appears that the standard will not allow for the most efficient operation of a department. For example, the foreman of a department may know that certain equipment will need extensive repairs during the coming budget period. If the maintenance allowance is not sufficient for this purpose, an additional maintenance allowance is made at the beginning of the period so that the foreman will not be tempted to put off the

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NORTON COMPANY

Kiln Plant DEPARTMENT BUDGET AND EXPENDITURE REPORT 1st Quarter 1930.

STANDARD ORDER	ITEM	ACTUAL EXPENDITURE				STANDARD FOR ACTUAL PRODUCTION	STANDARD FOR ESTIMATED PRODUCTION	BUDGET		
		Jan. Wks.	Feb. Wks.	Mar. Wks.	TOTAL			ORIGINAL AMOUNT	APPROVED CHANGES	ADJUSTED BUDGET
	<i>Yarn Kiln Production - Dept. Labor</i>	100000	100000	110000	310000	320000	310000	310000	-	310000
	Total Direct Labor	2472	2472	2720	7664	1000	1000	1000	-	1000
	INDIRECT LABOR									
100	Supervision and clerical	249	237	400	886	1000	1000	1000	-	1000
101	Breakdown to men	14	71	90	175	200	200	200	-	200
104	Trucking and handling materials	276	267	261	704	700	700	700	-	700
108	Setting up									
	Total Indirect Labor	539	575	751	1865	2000	2000	2000	-	2000
	Labor Bonus									
	EXPENSE									
500	Switching cars on Norton R. R.									
611	Templates, gauges, and sizing flanges									
612	Moving and re-erecting equipment									
613	Molds and mold parts									
615	Archers and bushings shearing rings, and bats									
630	Trucking (auto, taxi, and crane)									
640	Repairs to machinery and motors	24	24	10	58	75	75	75	-	75
651	" " backfire, tubes, and plates	1	26	67	94	100	100	100	-	100
652	" " main line hangers, shafts, and rollers					10	10	10	-	10
653	New building: materials and repairs									
656	New tools	10	9	10	29	50	50	50	-	50
659	Furniture, fixtures, and appliances	36	233	2	271	200	200	200	-	200
660	Safety devices									
692	Office supplies	20	11	30	61	60	60	60	-	60
695	Misc. supplies	17	14	12	43	100	100	100	-	100
	Power, heat, and light	146	161	200	507	500	500	500	-	500
	<i>Total</i>	2209	2467	3280	7956	9200	9200	9200	-	9200
	TOTAL EXPENSE	2611	2669	3471	8751	10000	10000	10000	-	10000

REMARKS ON REVERSE SIDE

FIGURE 5—Report of Budget Accomplishment—First Page

repairs until the equipment breaks down entirely.

Comparison of Budget to Actual Performance

At the end of each quarter, the actual results are plotted on the graphs and all variations over and under the curve must be accounted for. Variations under the curve, especially in the maintenance accounts, are indicative of the fact that equipment is not being cared for properly, and such a report usually calls for an investigation. These quarterly results are plotted as points but are not drawn in as curves.

Monthly and quarterly, the same results are entered in a series of bound statistical forms in which the budget and actual accomplishments are compared. The management operating report is made up from the figures shown in this volume.

If for any lengthy period of time the points representing actual accomplishment remain consistently over the curve, the curve is changed so that the standards which it represents will be modified in view of altered conditions. For example, if the base rate for productive employees was increased in any department, the curve would be changed so as to take into consideration these new wage conditions.

Report of Budget Accomplishment

The budget system of the Norton Company includes a report of budget accomplishment submitted to the head of each department in the form shown in Figures 5 and 6, pages 19 and 20. These two forms are combined in a booklet and are reviewed by the works manager, the budget officer, the methods department, the general foreman, the department foreman and the assistant foreman.

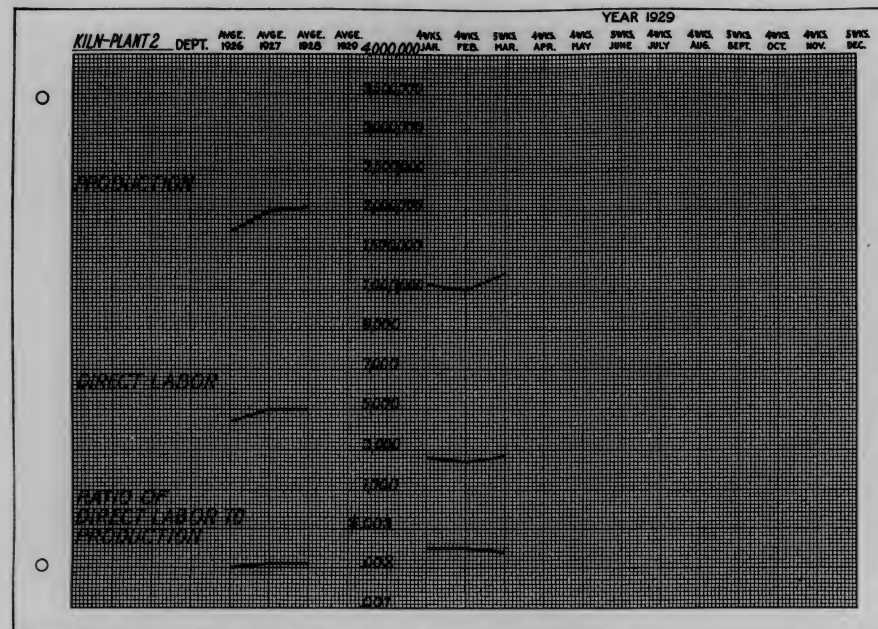


FIGURE 6—Report of Budget Accomplishment—Second Page

In the graph, Figure 6, is shown the department's production for three preceding years. Curves are also plotted on this graph for the major expense items incurred by the department, both for the current period as well as for the preceding years.

The Department Budget and Expenditure Report (Figure 5) which accompanies this graph is worthy of considerable attention, since it is this report which shows up the differences due to incorrect estimates on one hand and faulty supervision on the other. The last three columns of this form, headed "Budget," are used for placing the original estimates. In the first of these three columns, headed "Original Amount," is placed the estimated production and the corresponding expenses taken from the graphs at this production level. The second column is used for inserting any additions over and above the budget allowance, as explained in a preceding

paragraph. The final column represents the sum of the two preceding columns.

The first three columns, after that headed "Item," are used for recording the actual production and expenses month by month, the quarterly total being placed in the fourth column. For this particular report, it will be noted that the actual production as shown on the first line of the fourth column is less than the budget estimate of production. Since this situation exists, it is evident that actual expense should not be as much as the budget. In order to determine what the expense should be for actual production, at the close of the quarter the account graphs are consulted and the cost standards for actual production are taken off and recorded in the column headed "Standard for Actual Production." Any differences between the items as shown in column four and those in column five represent the cost differences due to

management. The difference between column four and column six represents the effective-ness of the estimates.

Through a report of budget accomplishment of this type, one of the chief difficulties of budget reports has been eliminated. The type of budget report which shows only the difference between budgeted and actual

expenditures, does not offer the best control if production does not equal the sales estimate or the amount laid down in the original production schedule. When this condition exists, although actual and budgeted expense may coincide, it is possible that the unit cost will be greater than standard yet not be noticed in the budget procedure.

The Fairbanks Company

THE FIRST STEP in the budgeting procedure of The Fairbanks Company of New York, N. Y., is the preparation of a series of flexible forecasts of sales, income, factory production, profit and loss, and balance sheets, the bases of the financial budget. These flexible forecasts take the operating results of a normal year and increase therefrom in steps of 5 per cent up to 25 per cent over a normal year. They also decrease from normal in steps of 10 per cent down to the "break-even point". The "break-even point" is that percentage of productive capacity below which operations take place at a loss. The flexible forecasts are based on the expectation of selling the factory production at each level so that the forecast for production, sales, profit and loss, and balance sheet are in step one with the other.

- (a) Direct materials
- (b) Department expense
- (c) Factory general expense

Materials Budget

Budgets for Direct Materials are prepared for both the Brass Valve Division and the Iron Valve Division, each being sub-divided into departmental budgets listing all the raw materials used in the department. Figure 7, page 22, illustrates the Direct Materials Budget for the Brass Valve Division.

Department Expense Budgets

Three Department Expense Budgets are prepared, one for the Brass Valve Division, one for the Iron Valve Division, and one for the Service Division. The divisional budgets are broken down into budgets for each subsidiary foreman-controlled department. The Department Expense Budgets include direct labor, indirect labor, departmental supplies and all other expenses directly controlled by the foreman of that department. Figure 8, page 22, illustrates the Department Expense Budget for the Brass Valve Division.

General Expense Budget

Figure 9, page 22, illustrates the Budget for Factory General Expense. This budget is divided into administrative and service departments as well as all items of supervision and fixed expense. In making estimates for the factory general expenses, all items are considered controllable with the exception of insurance, taxes and depreciation.

Production Estimate

The budget procedure of this company next calls for an estimate of the volume to be turned out during the following year in terms of good castings produced. The flexible forecasts are used in conjunction with the budget built around the production estimate, so that if and when production falls below or above the estimate the actual production costs can be compared with the flexible forecast having a production volume corresponding to actual production. These flexible forecasts indicate how closely costs are being kept to normal when actual production does not correspond to the estimate prepared at the first of the year.

The Production Budget of The Fairbanks Company's Binghamton Valve Factory is prepared under three headings:

METROPOLITAN LIFE INSURANCE COMPANY

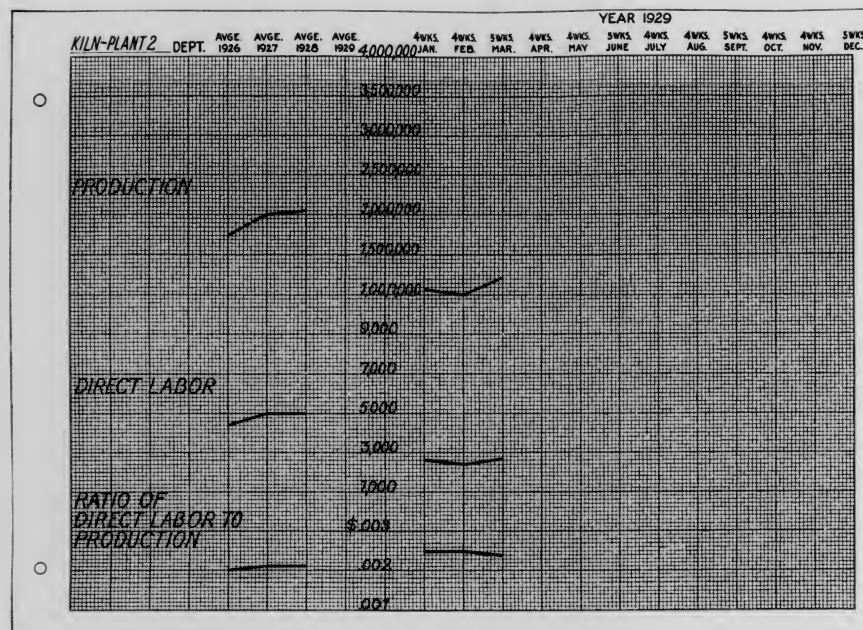


FIGURE 6—Report of Budget Accomplishment—Second Page

In the graph, Figure 6, is shown the department's production for three preceding years. Curves are also plotted on this graph for the major expense items incurred by the department, both for the current period as well as for the preceding years.

The Department Budget and Expenditure Report (Figure 5) which accompanies this graph is worthy of considerable attention, since it is this report which shows up the differences due to incorrect estimates on one hand and faulty supervision on the other. The last three columns of this form, headed "Budget," are used for placing the original estimates. In the first of these three columns, headed "Original Amount," is placed the estimated production and the corresponding expenses taken from the graphs at this production level. The second column is used for inserting any additions over and above the budget allowance, as explained in a preceding

paragraph. The final column represents the sum of the two preceding columns.

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THE MANUFACTURING EXPENSE BUDGET

management. The difference between column four and column six represents the effectiveness of the estimates.

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Production Estimate

The budget procedure of this company next calls for an estimate of the volume to be turned out during the following year in terms of good castings produced. The flexible forecasts are used in conjunction with the budget built around the production estimate, so that if and when production falls below or above the estimate the actual production costs can be compared with the flexible forecast having a production volume corresponding to actual production. These flexible forecasts indicate how closely costs are being kept to normal when actual production does not correspond to the estimate prepared at the first of the year.

The Production Budget of The Fairbanks Company's Binghamton Valve Factory is prepared under three headings:

- Direct materials
- Department expense
- Factory general expense

Materials Budget

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General Expense Budget

Figure 9, page 22, illustrates the Budget for Factory General Expense. This budget is divided into administrative and service departments as well as all items of supervision and fixed expense. In making estimates for the factory general expenses, all items are considered controllable with the exception of insurance, taxes and depreciation.

Budget Construction

The Fairbanks Company's budget is constructed on the theory that all direct materials and department expense (Figures 7 and 8) vary in direct proportion to the amount of production, with the result that they are fixed at a certain amount per ton of good castings produced. Although the Materials Budget includes only those items which can be identified in the finished

product, all other materials being classified as expense supplies chargeable directly to the consuming department, all materials, both direct and indirect, are considered as being directly in proportion to production volume.

Indirect labor has been divided into two classes: hourly and day work, and foremen and clerks. The hourly and day work indirect labor is included in the Department Expense Budgets and it is assumed that this item of cost will vary directly with production; as a consequence, it is budgeted at so much per ton. Foremen and clerical salaries are included in the Factory General Expense Budget and are budgeted in dollars for each department, and also

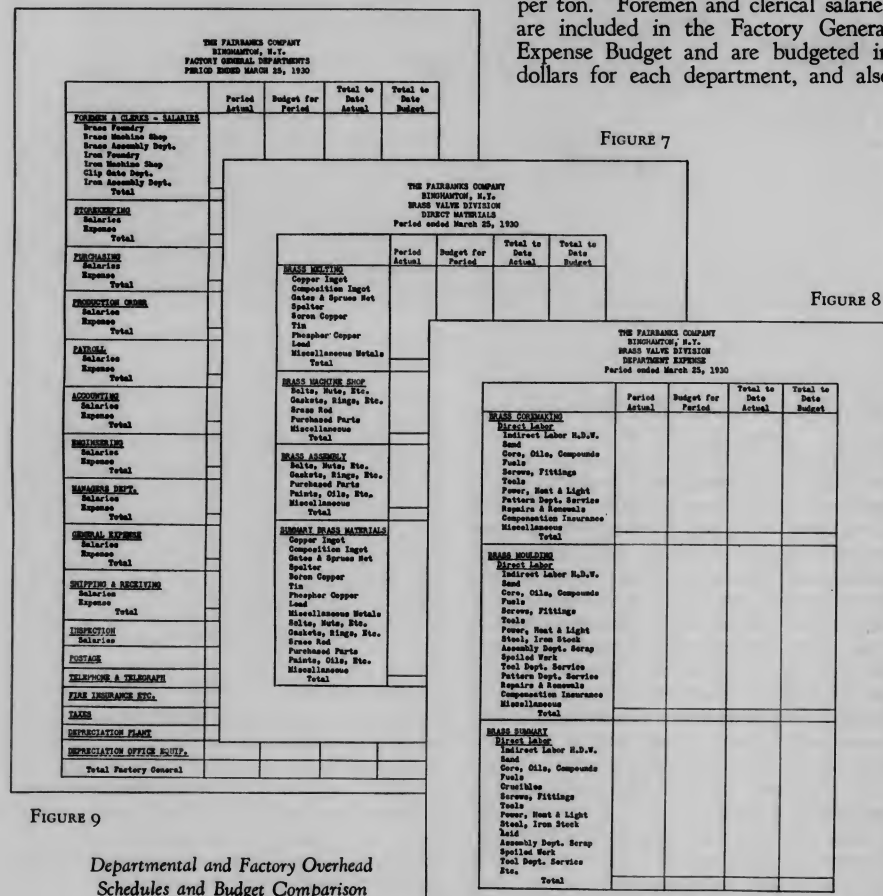


FIGURE 9

Departmental and Factory Overhead Schedules and Budget Comparison

in cost per ton for the estimated volume of production. In this manner, hourly and day work indirect labor cost per ton is constant at each production level, while foremen and clerks indirect labor cost per ton is fixed for the estimated amount of production.

The budgets of The Fairbanks Company are based on the average costs per ton as determined from the previous year's operations, after making certain adjustments therein to reflect expected savings due to the introduction of manufacturing economies. Thus, all the items included in the Direct Materials Budgets and the Department Expense Budgets are fixed at a certain cost per ton no matter what productivity amounts to. All items appearing in the Factory General Expense Budget are estimated in the manner described above for foremen and clerks in dollars for the budget period as well as in cost per ton at the volume level called for in the production estimate.

The effect of this procedure is that, if the factory realizes the quantity of production set in the schedule, the cost per ton of these items will be equivalent to the budgeted cost per ton. If the production does not come up to the estimate, there will be a variation in cost per ton which is shown as a variance due to change in production, and is, of course, apart from the dollar variation from the budget.

The production estimate discussed in a previous paragraph is prepared in tons of good castings produced, not in terms of units of product. Since no estimate is made of the kinds of valve to be produced, the budget cannot be expressed in terms of unit costs. Unit costs are determined, however, to reflect the actual manufacturing costs at the time goods are produced. By this system all the actual expenses of the factory during each period are distributed to the production of the period. This results in a week to week variation in unit costs, due, in a great measure, to volume changes in production.

In figuring the unit costs, the production order system is used whereby an order is issued for a certain quantity of a particular type and size of part, and all of the material and labor used on the particular order is

charged to it. The total overhead of the period or periods in which the order is being worked is spread, on the basis of direct labor, to all of the orders in process at the time each department's expense is distributed. The Factory General Expense is also distributed to all of the orders worked on during the period on the basis of direct labor. In doing this, the manufactured goods reflect the actual cost of production, absorbing all of the material, labor and overhead expended during the period or periods in which they are in process. On this basis, goods are put into stock and, on this basis, they are costed out and the profit and loss determined. Under these conditions the budget becomes primarily an instrument of control and analysis.

To aid in controlling the manufacturing expense, schedules are prepared at the close of the week for every department, showing the actual expenditures made in the department for each of the budgeted items, and comparing these with the amounts allowed by the budget. These schedules are also carried out to show the same information for the total to date.

Comparison of Actual to Budget Performance

In order to bring out clearly the effect of variations from the budget on the cost of manufacturing, The Fairbanks Company has set up manufacturing reports to show the costs in each element according to the budget. These reports show at a glance what the cost of manufacturing should have been, what it actually was, and the amount it exceeded or was within the budget. In addition to showing amounts for each cost element, the report also contains the cost per ton for each class of product.

The budget is prepared by the auditor of The Fairbanks Company located in the New York office. He receives the actual results from the plant cost accountants on a form prepared for that purpose. These results are then compared with the budget and the comprehensive budget comparison is prepared for the financial management, copies being sent to all interested executives.

ACKNOWLEDGMENT

The Policyholders Service Bureau gratefully acknowledges the generous cooperation of the following companies in the preparation of this report.

AMERICAN SALES BOOK

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A Budget Procedure Through
Standard Costs

B-91



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A BUDGET PROCEDURE
THROUGH STANDARD COSTS

NOTE This report was prepared to answer specific questions presented by a Group insurance policyholder of the Metropolitan. It was compiled with special reference to the situation confronting the organization for which the work was done, and is not intended as an all-inclusive discussion of the subject. The report has been made available for general distribution because it is believed that much of its contents will be of interest to executives confronted with similar problems. In its present form, references or material of exclusive interest to the company for which it was prepared, have been removed.

Prepared by
Policyholders Service Bureau
Metropolitan Life Insurance Company
New York City
1929
Reprinted 1932

A BUDGET PROCEDURE
THROUGH STANDARD COSTS

There has been a pronounced tendency during the last decade for many manufacturers to adopt some form of standard costs. Not only has this been manifested through the action of individual concerns, but also through the introduction by entire industries of uniform standard cost procedures. These systems are claimed to have caused substantial economies, both through better control over operations and through a more healthy competitive condition resulting from intelligent use of reliable operating and cost data.

The evolution of standard costs is described as follows by a recent contributor to the Journal of Accountancy:

"Cost accountants developed cost accounting in answer to to a demand of the industries for a means whereby they could find and record their actual costs of manufacture. After finding their costs, they realized this was not enough - they must control costs - and the result was the development of standard costs."

The purpose of this report is to present in simplified form the standard practices of one concern that operates successfully under standard costs. The illustration is presented through the courtesy of the Robert Gair Company, manufacturers of folding boxes, paperboard and corrugated boxes. It is hoped that some phases of the system may be adaptable to the uses of other concerns.

The underlying theme of the Robert Gair Company budget is that there are certain responsibilities placed upon the executive and the aim of the accounting procedure is to give the accounting facts in terms of these responsibilities. Relatively few systems of accounting provide this information. This

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standard cost procedure likewise simplifies the accounting methods considerably.

In order to provide a specific example of the operation of this system, a budget period of 100 hours is assumed, during which the standard production is 200 units. It is further assumed that the material cost, consisting of materials A and B, is as follows:

	<u>Material A</u>	<u>Material B</u>	<u>Total</u>
Standard Allowance (Tons)	50	50	
Standard Cost per Ton (including waste allowance)	\$ 30.00	\$ 40.00	
Total Standard Material Cost	1800.00	2000.00	\$3800.00
Standard Material Cost per Unit	9.00	10.00	19.00

Thus, the standard material cost is readily reduced to a unit basis.

A comparison of standard with actual costs, including waste adjustments and the journal entries necessary to record these adjustments, is shown in Schedule D. The costs by direct labor, variable burden and fixed burden, through two operations, numbers 1 and 2 may now be traced. The assumptions in regard to these factors are as follows:

	<u>Total Standard Operating Cost</u>	<u>Direct Labor</u>	<u>Variable Burden</u>	<u>Fixed Burden</u>
Total Cost	\$2000.00	\$400.00	\$600.00	\$1000.00
Cost per Hour-Operation 1	13.00	3.00	4.00	6.00
" " " " " 2	7.00	1.00	2.00	4.00
Total Cost per Hour	20.00	4.00	6.00	10.00
Cost per Unit	10.00	2.00	3.00	5.00

- 3 -

The standard, administrative and sales expense is 10% of the standard operating cost or \$200, and a per unit cost of \$1.00. This figure, when added to the material cost of \$3800 and the operating cost of \$2000, makes a cost of sales of \$6000, and a per unit cost of \$30.00. The standard profit for purposes of illustration is 20% of the standard cost of sales, or \$1,200, and a per unit cost of \$6.00, giving a total standard production cost of \$7200 and \$36.00 per unit cost.

The foregoing information is restated in Schedule A.

Now for purposes of illustrating the accounting procedure whereby results also reveal responsibility, it is assumed that the number of units made in operation No. 1 is 100. Under operation No. 2 four units are spoiled, giving a yield of 96. The number of hours allowed for operation No. 1 is 50 and the number of hours worked on operation No. 1 is the same - 50. The number of hours allowed on operation No. 2 is 48 and the number of hours worked on operation No. 2 is one hour less or 47.

Idle time avoidable arising from waiting for stock, etc., is 5 hours for operation No. 1 and 3 hours for operation No. 2.

The standard cost of material A is \$30 per ton but this is actually purchased at \$28.00 per ton. The standard cost of material B is \$40.00 per ton but this is actually purchased at \$38.00.

The standard consumption for material A is 28.8 tons but the amount actually consumed is 32 tons. The standard consumption for material B is 24 tons but the actual consumption is 26 tons.

All these facts are restated in Schedule B.

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Attention is now called to Schedule E - "Analysis of Operating Costs".

It will be noted therefrom that the number of units per operation for operation No. 1 is 100 and for operation No. 2, 96. Further, that the number of complete units is 96. It is also noted that the hours allowed and the hours worked for operation No. 1 are the same, but that one hour is gained in operation No. 2. It also appears that the budget hours of the schedule are 100, but five hours of idle time avoidable are consumed under operation No. 1 and three hours under operation No. 2. If the hours taken are added to the idle time avoidable and this sum is deducted from the budget hours of 100, the result shows the lost hours in the manufacturing division due to lack of volume. This amount in operation No. 1 is 45 hours and in operation No. 2, 50 hours.

Under direct labor it is known that there were 50 hours taken at the budget rate of \$3.00 per hour for operation No. 1, or \$150.00, and 47 hours at the budget rate of \$1.00 for operation No. 2, or \$47.00, making a total of \$197.00.

It will also be noted that 50 hours for the variable burden at the budget rate of \$4.00 for operation No. 1 and 47 hours at \$2.00 for operation No. 2 give a standard variable burden cost of \$294.00.

The full budget allowance for the fixed burden, which amounts to \$1000, is absorbed regardless of activity. There is also credited to the standard operating cost and debited back to loss and gain, the idle time avoidable lost in manufacturing because of lack of volume. This amounts to 45 hours for operation No. 1. At \$6.00 per hour, or \$270.00, and 50 hours for operation No. 2 at \$4.00 per hour, or \$200, making a total credit from this source of \$470.00.

The principle at stake here is that the standard operating cost should not be charged with costs arising from lack of volume.

There is also credited against the standard operating cost and debited back to manufacturing loss and gain, the loss arising from idle time avoidable. This consists of 5 hours at \$6.00 per hour for operation No. 1 or \$30.00, and 3 hours at \$4.00 per hour for operation No. 2, or \$12.00, making a total of \$42.00. The principle at stake here is that the standard operating cost should not be charged with factory inefficiency. That is purely a manufacturing loss or gain.

The total standard operating cost is now considered. This amounts for operation No. 1 to \$13.00, consisting of \$3.00 for direct labor, \$4.00 for variable burden and \$6.00 for fixed burden. The total operating cost of operation No. 2 is \$7.00, consisting of \$1.00 for direct labor, \$2.00 for variable burden and \$4.00 for fixed burden. The budget unit rate for operation No. 1 is \$6.50 and \$3.50 for operation No. 2, or a total of \$10.00. If there were 96 units produced at \$10.00 per unit, the complete operating cost would be \$960.00, which amount is charged to work in process.

One or two other items remain. In operation No. 2 there is a saving of one hour at the budget rate of \$7.00 an hour. This \$7.00 is credited as production gain under manufacturing loss and gain and is testimony of the efficiency of the factory.

Four units were spoiled in operation No. 2. This loss, at a unit operating cost of \$6.50, originated from operation No. 1. This \$26.00 should not be charged to standard operating costs but is charged against manufacturing

- 6 -

operations and appears as excess waste in manufacturing under manufacturing loss and gain.

Summing up, therefore, credits are as follows: Labor for the standard operating cost of \$197, Variable Burden \$294, Fixed Burden \$1,000, and Production Gain \$7.00, similarly the debits are: Work in Process \$960.00, Excess Waste in Manufacturing \$26.00, Idle Time Avoidable \$42.00 and Volume Loss \$470.00. All of these facts are set forth in Schedule E.

Material Costs

The analysis of material costs contained in Schedule D may now be considered for a moment.

The standard allowance for 200 units of material A is 60 tons. Ninety-six units were completed. $96/200$ of 60 tons, the standard allowance quantity, is 28.8 tons. There was actually consumed 32 tons of material A, which gives an excess waste of 3.2 tons. The standard price per ton is \$30.00 and the actual purchase price is \$28.00. The work in process is debited for the standard quantity allowed at standard price; that means 28.8 times \$30 or \$864.00. The material account is credited for the actual quantity at the purchase price, which means 32 tons times \$28.00 or \$896.00.

There has been a purchase gain of \$2.00 per ton, the difference between \$30.00, the standard price, and the actual purchase price of \$28.00. 32 tons times \$2.00, or \$64.00, is credited to the purchase gain, the difference in actual purchase price under standard. Now there was also an excess waste quantity of 3.2 tons at the standard price of \$30.00 or \$96.00 chargeable against excess material.

Similarly, for material B the amount allowed for 200 units was 50 tons and for the 96 units completed, 96/200 of 50 tons or 24 tons. The actual amount consumed was 26 tons. There is thus an excess waste quantity of 2 tons. The standard price is \$40.00; the purchase price is \$38.00. The work in process is debited for the standard quantity of 24 tons times the standard price per ton, \$40.00, or \$960.00, and the material account is credited for the actual quantity at the purchase price, that is 26 tons times \$38.00 or \$988.00.

There is a purchase gain of \$2.00 per ton for 26 tons, or \$52.00, and an excess material cost of \$80.00 consisting of 2 tons at \$40.00 per ton, the standard price.

The work in process is debited with the standard quantity allowed at the standard price of \$1,824. Excess waste is debited with consumption in excess of standard allowance at a standard price of \$175.00, making a total of \$2,000.

Raw materials are credited with actual tons used at the inventory purchase price of \$1,884.00 and the purchase loss and gain with tons used times difference between standard and purchase price of \$116.00, again giving \$2,000.

Ledger Operating Accounts

From this analysis of the material account, it is now possible to turn to the actual ledger operating accounts, shown in Schedule C. There is an account for Direct Labor by individual machine groups. This is debited with actual payroll, which happens to be \$200.00 and is credited with actual hours worked at budget rate per hour or \$197.00. There arises a labor loss of \$3.00 which might develop from an increased wage allowance not provided for when the

standard was set. This \$3.00 is debited against manufacturing loss and gain under the item Labor Loss and Gain.

The operating account, Variable Burden, is also kept by individual machine groups and individual cost elements. The actual cost from sundry source items is \$289.00 and the account is credited on the basis of actual hours worked at budget rates per hour, or \$294.00. There is then a variable burden gain of \$5.00 credited under Manufacturing Loss and Gain.

The next account to consider is the Fixed Burden account, kept by individual cost elements. This is credited with the full budget allowance for the period regardless of activity, or \$1000, and is debited with actual cost from sundry sources of \$980.00. Here, too, there is a fixed burden gain of \$20.00 credited to manufacturing loss and gain under that item.

The account, Administrative and Sales Expense, kept by individual cost elements, is credited with the full budget allowance for the period, regardless of activity, which is 10% of the standard operating cost of \$200.00. Debited against this amount is \$196.00 drawn from sundry sources, leaving a gain of \$4.00 which is credited to Administrative and Sales Expense Gain.

The Standard Operating Cost account, shown on Schedule F, is now considered. This account is debited with direct labor consisting of actual hours worked at the budget rate per hour amounting to \$197.00; with variable burden, consisting of actual hours worked at the budget rate per hour in the amount of \$294.00 and with the full budget allowance for fixed burden for the period regardless of activity, \$1,000. There is also a debit of \$7.00 on account of production loss and gain, arising from the saving of hours in production in excess

- 9 -

of the allowed budget hours. This is on the principle that if the standard operating cost is not to reflect factory inefficiency it is also not to be credited with factory savings. These are to be reflected under manufacturing loss or gain.

The standard operating cost account is credited by way of work in process with \$960.00 for the 96 units completed at the standard unit cost of \$10.00. It is also credited with the idle time avoidable hours of \$42.00; with the volume loss and gain, consisting of hours idle due to lack of business, at fixed burden rate per hour, or \$470.00, and with excess waste consisting of the standard operating cost applicable to units spoiled in operation, or \$26.00.

The standard administrative and sales expense account is debited for the administrative and sales expense as per budget or \$200, and credited for 10% of the standard operating cost absorbed through manufacture, or \$96.00. The difference is shown as the volume loss administrative and sales expense under trading loss and gain.

The account of Work in Process is debited for the standard operating cost of \$960.00 and for the standard material cost of \$1884.00 and is credited with the number of units completed, (96), at the unit cost of \$29.00, or \$2,784.

The 96 units completed have a sales value of \$36.00 per unit, or \$3456.00. For that amount the account Finished Goods is debited. If from this debit of finished goods of \$3456.00, there is deducted the standard material and standard operating cost of \$2784.00, and the total administrative and sales expense of \$96.00, a total of \$2880.00, a sales profit on the 96 units at \$6.00 per unit, or \$576.00, is secured.

Profit and Loss Statement

All the foregoing information may be summarized in a profit and loss statement, of which two schedules are submitted, one on the basis of standard cost, Schedule H, and the other on the basis of actual cost, Schedule I. It is apparent that the profit and loss statement on the standard cost basis is the most informative in this case.

Schedule "A"

Budget

Budget Period 100 hours
Standard Production for period 200 units

1 - <u>Standard</u> <u>Material</u> <u>Cost:</u>	A - 60 tons, including standard waste allow- ance, at \$30.00 per ton.	<u>Total</u> (200 units)			<u>Per Unit</u>
		1,800.00			9.00
2 -	B - 50 tons, including standard waste allow- ance, at \$40.00 per ton	<u>2,000.00</u>			<u>10.00</u>
	Total	<u>3,800.00</u>			<u>19.00</u>
3 - <u>Standard</u> <u>Operating</u> <u>Cost</u>			<u>Per Hour</u>		<u>Total</u>
			<u>Oper.</u> <u>No. 1</u>	<u>Cper.</u> <u>No. 2</u>	
4 -	Direct Labor	400.00	3.00	1.00	4.00 2.00
5 -	Variable Burden	600.00	4.00	2.00	6.00 3.00
6 -	Fixed Burden	<u>1,000.00</u>	<u>6.00</u>	<u>4.00</u>	<u>10.00</u> <u>5.00</u>
7 -	Total	<u>2,000.00</u>	<u>13.00</u>	<u>7.00</u>	<u>20.00</u> <u>10.00</u>
<u>Standard</u> <u>Administrative</u> <u>& Sales Expense:</u>					
8 -	10% of Standard Operating Cost	<u>200.00</u>			<u>1.00</u>
9 - <u>Standard Selling Cost:</u>		6,000.00			30.00
10 - <u>Standard Profit:</u>	20% of Standard Selling Cost	<u>1,200.00</u>			<u>6.00</u>
11 - <u>Standard Production:</u>		<u>7,200.00</u>			<u>36.00</u>

Schedule "B"

Assumed:

- 1 - Number of Units made - Operation 1 - 100
- 2 - Number of Units made - Operation 2 - 95
(4 units spoiled operation No. 2)
- 3 - Hours allowed - Operation No. 1 - 50
- 4 - Hours allowed - Operation No. 2 - 48
- 5 - Hours worked - Operation No. 1 - 50
- 6 - Hours worked - Operation No. 2 - 47
- 7 - Idle Time Avoidable - Hours
Operation No. 1 - 5
- 8 - Idle Time Avoidable - Hours
Operation No. 2 - 3
(Waiting for Stock, etc.)

9 - Material:

- A - Standard Cost per ton \$30.00
- Purchase Price per ton 28.00
- B - Standard Cost per ton 40.00
- Purchase Price per ton 38.00

10 - Material:

- A - Consumption - Standard 28.8 tons
- Actual 32.0 tons
- B - Consumption - Standard 24.0 "
- Actual 26.0 "

Operating Accounts

1 - Operating Accounts: Direct Labor
(By Individual Machine Groups)

Debit:		Credit:	
Actual Cost:		Actual Hours worked at	
Pay Roll	\$200.00	Budget Rates per hour	
		E - 7	\$197.00-(Debit
		Labor Loss	3.00 Standard
			\$200.00 Operating
			Cost)

2 - Operating Accounts: Variable Burden
(By individual Machine Groups
and individual Cost Elements)

Debit:		Credit:	
Actual Cost:		Actual Hours worked at	
Sundry Sources:	\$289.00	Budget Rates per hour	
Variable Burden Gain	5.00	E - 7	\$294.00-(Debit
			Standard
			Operating
			\$294.00 Cost)

3 - Operating Accounts: Fixed Burden
(By individual Cost Elements)

Debit:		Credit:	
Actual Cost:		Full Budget Allowance for	
Sundry Sources:	\$980.00	Period regardless of Activity	
Fixed Burden Gain	20.00	E - 7	\$1000.00-(Debit
			Standard
			Operating
			\$1000.00 Cost)

4 - Operating Accounts:
Administrative and Sales Expense
(By individual cost elements)

Debit:		Credit:	
Actual Cost:		Full Budget Allowance for	
Sundry Sources:	\$196.00	the Period regardless of	
Administrative &		Activity	
Sales Expense Gain	4.00	A - 8	\$200.00-(Debit Ad.
			Administra-
			tive & Sales
			Expense)
			\$200.00

Schedule "D"

Grade	Standard Allowance (Quantity) for 96/Unit Completed	Actual Consumption Quantity	Excess Waste Quantity	Standard Price	Purchase Price	Debit: Work in Process (Standard Quantity Allowed at Standard Price)	Credit: Material (Actual Quantity at Purchase Price)	Credit: Purchase Gain Diff. in Unit Price	Debit: Excess Material (Excess over Standard Allowance)
1	2 B-13, 15	3 B-14, 16	4 3-2	5 B-9, 11	6 B-10, 12	7 2 X 5	8 3 X 6	9 3X (5 - 6)	10 4 X 5
A	200 of 60 Tons = 28.8	32.0	3.2	30.00	28.00	864.00	896.00	64.00	96.00
B	96 200 of 50 Tons = 24.0	26.0	2.0	40.00	38.00	960.00	988.00	52.00	80.00
						1824.00	1884.00	116.00	176.00
Debit: Work in Process with Standard Tons Allowed at Standard Price									
				\$ 1,824.00					
Debit: Excess Waste with Consumption in excess of Standard Allowance at Standard Price									
				176.00					
				\$ 2,000.00					
Credit: Raw Materials with Actual Tons used at Inventory (Purchase) Price									
				\$ 1,884.00					
Credit: Purchase Loss & Gain with Tons used times difference between Standard and Purchase Price									
				116.00					
				\$ 2,000.00					

Analysis of Operating Cost

Schedule "E"

	No. of Units Operated	No. of Complete Units	Hours Allowed	Hours Taken	Budget Rate per Hour	Budget Rate per Unit	Debit, Standard Operating Cost-account Credit, Individual Operating Accounts	Production Gain	Excess Waste Manufacturing	Budget Hours	Idle Time Avoidable		Volume Loss Mfg. Div.	Work in Process
											Hrs.	Am't.		
	1	2	3	4	5	6	7 4.25	8 (3-4)X5	9 (1-2)X6	10	11	12 11X 5	13 10- 13X5 4X11	14 15 2X6
Operation No. 1 " 2	100 96	96	50 48	50 47										
Direct Labor, Op. No. 1 " 2 Total					3.00 1.00		150.00 47.00 <u>197.00</u>			100 100	5 3		45 50	
Variable Burden, Op. No. 1 (Separately for " 2 Each Cost Factor) " 2 Total					4.00 2.00		200.00 94.00 <u>294.00</u>							
Fixed Burden, Op. No. 1 Full Budget Allowance Regardless of Activity Op. No. 2 Total					6.00 4.00		1,000.00					30.00	270.00	
Total Standard Operating Cost Op. No. 1 " 2 Total					13.00 7.00	6.50 3.50 <u>10.00</u>	1,000.00	7.00 <u>7.00</u>	26.00 <u>26.00</u>			12.00 <u>12.00</u> <u>42.00</u>	200.00 <u>200.00</u> <u>470.00</u>	950.00

Debit:	Work in Progress	960.00
	Excess Waste-Mfg.	26.00
	Idle Time Avoidable	42.00
	Volume Loss	470.00
		<u>\$1,498.00</u>

Credit:	Direct Labor	197.00
	Variable Burden	294.00
	Fixed Burden	1000.00
	Production Gain	7.00
		<u>\$1498.00</u>

Schedule "F"

Standard Operating Cost Account

1-

<u>From Operating Accounts:</u>	:	<u>To Work in Process (E-15)</u>	
<u>Direct Labor (C-1)</u>	:	Units completed at	
Actual Hours Worked	:	Standard Unit Cost	\$960.00
at Budget Rate per hour \$197.00	:	<u>Idle Time Avoidable (E-12)</u>	
<u>Variable Burden (C-2)</u>	:	Idle Time Avoidable	
Actual Hours worked	:	hours at Fixed Burden	
at Budget Rate per hour 294.00	:	Rate per hour	42.00
<u>Fixed Burden (C-3)</u>	:	<u>Volume Loss & Gain</u>	
Full Budget Allowance	:	<u>Mfg. Div. (E-14)</u>	
for the period regardless	:	Hours idle due to lack	
of activity 1,000.00	:	of business at Fixed	
	:	Burden Rate per hour	470.00
<u>Production Loss & Gain (E-8)</u>	:	<u>Excess Waste -</u>	
Saving in hours due to	:	<u>Mfg. (E-9)</u>	
production in excess of	:	Standard Operating Cost	
Standard at full Budget	:	applicable to Units	
Rate per hour 7.00	:	spoiled in Operation	26.00
<u>\$1,498.00</u>	:		<u>\$1,498.00</u>

2-

Standard Administrative and Sales Expense

Debit:	:	Credit	
	:		
Operating Accounts	:	10% of Standard Operating	
Administrative and Sales	:	Cost absorbed through	
Expense, per Budget A-8 \$200.00	:	<u>Manufacture (E-15)</u>	\$960.00
	:		96.00
	:	Volume Administrative	
	:	and Sales Expense	
	:	(Balance)	104.00
\$200.00	:		<u>\$200.00</u>

Schedule "G"

1 - Work in Process		
Debit:		Credit:
Standard Material Cost (D-7)		Number of Units Completed
Units completed		at Total Unit Cost
at standard		(Material & Operating)
Allowance (Quantity) \$1,824.00		96 Units @ \$29.00
		(A - 3 plus 7) \$2,784.00
Standard Operating Cost		
(E-15)		
Units completed at		
Standard Unit Cost	960.00	
	<u>\$2,784.00</u>	<u>\$2,784.00</u>

Inventories beginning and end of month omitted

2 - Sales Value -		
96 Units @ \$36.00 (A - 12)		\$3,456.00
		Debit
		Finished
		Goods
Selling Cost -		
Standard Material and Standard		
Operating Cost (G - 1)	\$2,784.00	
Standard Administrative and		
Sales Expense (F - 2)	96.00	
-	Total	<u>2,880.00</u>
Sales Profit -		
96 Units @ \$6.00		<u>\$ 576.00</u>

Schedule "H"

Profit and Loss Statement

<u>Production:</u> (96 units at \$36)		<u>Basis: Standard Cost</u> G-2	\$3,456.00
<u>Standard Cost:</u>			
Material	D-7	\$1824.00	
Manufacturing	E-15	960.00	
Administrative & Sales Expense	F-2	96.00	
Total			<u>2,880.00</u>
<u>Sales Profit:</u>	G-2		576.00
Interest on Capital Assets, charged to Operation (Assumed)			<u>150.00</u>
<u>Primary Profits:</u>			726.00
<u>Trading Losses and Gains</u>			
Administrative & Sales Expense	C-4 (gain)	4.00	
Purchase Loss & Gain	D-9 "	116.00	
Volume Loss & Gain-Mfg. Divisions	E-14 (loss)	470.00	
" " " " Adm. & Sales Div.	F-2 "	104.00	
Total (loss)			<u>454.00</u>
<u>Trading Profit:</u>			272.00
<u>Manufacturing Losses & Gains</u>			
Labor Loss & Gain	C-1	3.00	
Variable Burden Loss or Gain	C-2	5.00	
Fixed Burden Loss or Gain	C-3	20.00	
Production Loss or Gain	E-8	7.00	
Excess Waste-Material	D-10	176.00	
Excess Waste-Manufacturing	E-9	26.00	
Idle Time Avoidable	E-12	42.00	
Total			<u>215.00</u>
<u>Profit on Production</u>			<u>57.00</u>

Schedule "I"

Profit and Loss Statement

Basis: Actual Cost

Production (G-2)		\$3,456.00
Cost of Production		
Material (D-8)	\$1,884.00	
Operating Cost:		
Direct Labor (C-1)	\$200.00	
Variable Burden (C-2)	289.00	
Fixed Burden (C-3)	<u>980.00</u>	1,469.00
Administrative & Sales Expense (C-4)		<u>196.00</u>
Total		<u>3,549.00</u>
Loss		93.00
Interest on Capital Assets (Charged to Operation)		<u>150.00</u>
Net Profit		<u>57.00</u>

AN ECONOMIC SERVICE TO BUSINESS

This is one of numerous publications issued by the Policyholders Service Bureau in the interest of better management in business. The Metropolitan has good reason for desiring to contribute, so far as practicable, to improved practices in management. Effective management is a vital factor in the continuous and profitable operation of business enterprises and helps to bring about steady work and regular income for Metropolitan policyholders, who number more than one out of five of the general population. An even greater proportion than one-fifth of the employees in commerce and industry are insured by the Metropolitan Life Insurance Company. The relationship between prosperous policyholders and the company's progress is obvious.

Because of its great stake in the nation's economic life, the company has set up the Policyholders Service Bureau to carry out a program of economic service to business. The Bureau staff is made up of specialists in the various fields of management -- in business organization, office management, accounting and finance; in marketing, distribution, advertising and sales management; in production and personnel management; in business and economic research; in industrial health and accident prevention.

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Forecasting Sales in Connection
with A Budget Procedure

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FORECASTING SALES IN CONNECTION

WITH

A BUDGET PROCEDURE

NOTE . . . This report was prepared to answer specific questions presented by a Group insurance policyholder of the Metropolitan. It was compiled with special reference to the situation confronting the organization for which the work was done, and is not intended as an all-inclusive discussion of the subject. The report has been made available for general distribution because it is believed that much of its contents will be of interest to executives confronted with similar problems. In its present form, references or material of exclusive interest to the company for which it was prepared, have been removed.

Prepared by
Policyholders Service Bureau
Metropolitan Life Insurance Company
New York City
1930
Reprinted 1932



FORECASTING SALES IN CONNECTION

WITH

A BUDGET PROCEDURE

A study of the budget plans used by various companies disclosed a range of plans from a superficial estimate of the future based upon the company's past experience to a highly ^{fixed} classical budgeting procedure worked out to the last degree of refinement statistically and so set up that it included sales potentiality by measuring seasonal variations, business cycle changes, long-time growth and unusual erratic conditions.

The problems involved in estimating sales quota vary widely according to the size of the company; the extent of the market cultivated; the nature of the competition, whether local or national; the objects involved in fixing quotas and the uses to which they are to be put; the nature of the product sold, whether it be one of large unit value or small, durable or non-durable; and the type of distributive system employed, whether selling direct to consumers or through retailers, whether employing manufacturers' branches or independent wholesalers or no intermediaries of any kind. All of these factors and others relating to a particular business have a bearing upon the type of sales budgeting best adapted to a particular situation.

Sales budgets and sales quotas, though closely associated, should not be confused. A sales budget is an estimate of future sales for a certain period, divided between different products and between different parts

of the budget period. It is a statement of expected sales for the period and is designed to form the basis for the production schedule, for the purchasing program, and for other activities of the company during the budget period. On the other hand, a sales quota is a standard set for an individual salesman, distributor, branch manager, or other agency of the distributing organization. Where a budget system is used, the quotas result from a breaking down of the total budget, and the individual quotas constitute the parts of the total sales task which are assigned to the several members or divisions of the sales organization. Cases do exist wherein the quota system is used without a budget, usually in connection with a program of sales stimulation or an incentive compensation plan. The scope of this report is restricted to a consideration of estimating or forecasting sales in connection with a budget procedure.

Methods of Forecasting Sales

One company merely takes an average of its previous four years' sales and sets up this figure as the goal for the ensuing year. Another company, realizing that the estimate would be unduly influenced by sales made two, three and four years ago, establishes a weighted average of the past four years' sales giving the prior year's sales a weight of four, two years previous a weight of three, three years previous a weight of two and four years previous a weight of one. Through this method a weighted arithmetic average of the previous years' sales is obtained as a sales forecast. The estimated annual volume is then divided by twelve to arrive at the monthly sales forecast. The estimated sales volume is divided between prod-

ucts according to the company's attainments and past experience with that particular class of products. It is recognized that both of these methods are rather superficial and are merely presented in contrast with much more refined methods used by some organizations. Superficial estimates based solely on past experience do not consider the value of sales potentiality which, although existing, may not have been attainable in former years.

Another company combines its past performance with sales potentiality to estimate its sales volume. This company's products are divided into groups or classes which are presumably affected by the same set of economic conditions. For example, if the sales volume of a certain class of products is affected by mining conditions, these products are classified in one group and a study is made of the mining industry and its probable future. A definite relation is established between the peaks and valleys in the mining industry and the company's classified sales experience, and a forecast of the probable volume attainable on this particular class of products is made. This estimate is then split up into territories and a quota is allotted to a salesman which he agrees may be obtained through his efforts. The total sales volume is estimated and a separate estimate is made of the individual groups of products. It is expected that the total sales volume will have greater stability than that of the component parts. In forecasting the volume for the various groups of products, attention is given to past performance as well as sales potentiality that exists in a territory for particular classes of product. Through this method a company is inclined to set quotas that are attainable, being figured on past per-

formance and yet reflecting the possible sales that exists in a territory. These quotas are adjusted for seasonal variations and are checked with the individual salesman upon whom rests the responsibility of making his quota. After this predetermined sales volume figure is obtained a budgeting plan for expenses is set up accordingly.

The American Radiator Company Plan

In the case of the American Radiator Company, two factors are contributed to the budget by the statistical research department, viz., knowledge of potential sales and the future of general business. Executive judgment of specific conditions in a certain section of the country or branch of the business and many other factors often upset the charts of the statistical department. Conferences to test the dependability of statistics are frequent and important. During the past few years when conditions in this industry were far from normal, a policy of quarterly readjustments of sales plan, quotas, budget estimates and other factors based upon statistical prediction has helped minimize the possibility of error. Even after plans are revised for three months ahead, it sometimes becomes necessary, because of unusual conditions, to call special conferences. These conferences usually consider a specific product or specific sectional conditions in its relation to the budget program.

This company uses generally past history and current business trends as a foundation for preparing forecasts of future possibilities. This material is used also for other purposes than budgeting. Besides its own records and findings from field surveys, the company employs almost every

worthwhile business statistical service including "The Surveys of Current Business" issued by the United States Department of Commerce, the bulletins of the Federal Reserve Banking System and of other financial institutions, and other easily available sources of information. Many reputable business magazines, trade magazines touching upon the line of business activity which would affect the company sales of a particular product, and leading financial newspapers are culled for opinions and ideas. Articles are clipped and filed and are often quoted in arriving at decisions and to check conclusions reached through pure statistics or to corroborate conclusions based upon sound business judgment that happens to run contrary to statistical reasoning. Attention is given to price tendencies that affect the building industry on which the sale of heating equipment is largely dependent. Prices of agricultural products are considered in reaching conclusions as to sectional sales potentials. In forecasting sales of currently manufactured articles on which advertising as well as selling appropriations are based, practically all available data are analyzed and studied. The company's own comprehensive sales records, carefully tabulated in such a manner as to be easily available, form an important factor in arriving at the probable sales of a year ahead. The trend of sales toward the close of the year when the forecast is made, is likewise considered.

General business conditions in the trade are studied. Predictions of the various business services are carefully reviewed to find fundamental facts that may exist even when there is a wide divergence of opinions given in these services. Such elements are given the proper weight in building up

the company's own predictions. After the total sales are analyzed for each product manufactured, the company divides the results by zones, and each zone is carefully studied to find its proper sales potentials for twelve months ahead thus working toward branch quotas.

When the research department has made its surveys and studies and thereby determined potential sales for the year ahead, it determines the percentage of increase or possibly decrease that is likely to apply to each individual product, thus establishing the total quota for each. By studying the past sales of each article in each territory, this department arrives at a branch quota for each item. The general economic condition of the territory and the number of salesmen influence the final figure. Consequently, each manager knows at the beginning of the year exactly how much of each item his territory is expected to sell during the twelve months ahead.

When there is a marked change in the rate of sales on any product or when sales are failing to come up to the prediction, the company first checks over the forecast to make sure of its accuracy, and failing to find the answer sends men from the sales promotion or field supervision departments to study prevailing conditions. An example of this checking procedure is reflected in the case of the Arcola, a new heating apparatus produced by the company.

In this case, the manager of the Arcola sales and two or three other representatives spent several days with the Arcola salesmen who had the best selling records, and with certain customers who had sold the most units. Weeks were consumed in determining exactly what field factors affected the

sales of the product. As a result of their findings it was decided that the original marketing plan had fallen short largely because the official organization, in its enthusiasm about an article it knew would fill a definite need, had underestimated the effort necessary to make the public conscious of its need. More aggressive advertising was needed, more missionary work had to be done than was anticipated throughout the company's own sales organization and that of its distributors, if they were to be depended upon properly to sell the proposition to the ultimate consumer. When the data was assembled and studied, a plan was made and tested in the field. Subsequently, it was applied broadly to the entire country with the result that the sales department reached and exceeded its quota for the year, although it had fallen considerably behind in the first few months. The company uses such field surveys to establish knowledge of the kind and type of new products needed in the heating field, to gather statistics which aid in making up a forecast of sales potentials for a new product and to find methods and means of selling to the limit of predetermined potentials.

Fundamentally the American Radiator Company's ability to forecast future sales volume enables it to determine ahead of time how much money will be available for sales promotion and to judge well enough for all purposes the percentage of increased income that may be spent safely for such work if a given program is followed. Thus, sales research becomes a preventative of waste and an incentive to the branch manager and salesman to attain their sales quotas.

Holtzer-Cabot Electric Company Plan

According to Mr. William S. Kemp, Treasurer of the Holtzer-Cabot Electric Company, Boston, Mass., the sales budget in this company is usually made up as follows: Shortly before the end of the fiscal year each salesman is instructed to interview each one of his customers and obtain the customer's opinion as to the amount of goods (sizes, grades, etc.) that he will require during the coming year, and the probable dates of delivery wanted.

The salesman makes this detailed report to his district sales manager. Each district sales manager reports it to the general sales manager on specially prepared forms. The district sales manager also applies his own judgment to the estimate and reports in detail his opinions. The final figure or total estimated sales volume is the result of the composite judgment of all, each having certain knowledge, experience and facts upon which his forecast is made.

This total estimate of the possible business of the coming year is then submitted to the factory executives who analyze the amount with respect to their ability to make the product specified and to meet the estimated deliveries. This study involves the question of ability to obtain raw materials on the dates required, the necessary labor, skilled and unskilled, plant extension and the necessary new equipment, the estimated cost, and other problems of like character.

The sales department's forecast of possible sales together with the factory's report on its ability and requirements to manufacture the product called for are then submitted to the financial department which in

turn studies the forecast from a financial viewpoint and determines whether or not the program as submitted can be financed, what new capital, if any, will be required and how it can be obtained.

All these reports are then submitted to the President or Executive Board for study and decision as to whether or not the volume of business forecasted should be approved, and if not, the maximum program that should be adopted.

Simonds Saw and Steel Company Plan

The sales forecast of the Simonds Saw and Steel Company is based upon past performance and a valuation of economic forces or indexes to which the company's sales volume bears a definite relation. This correlation is established through a minute study and analysis of the company's past sales movement and the movement of such indexes. The sales for 1929 varied two-fifths of one per cent. from the estimated sales which were forecasted in the fall of 1928.

According to Mr. Thompson, assistant to the President in this organization, industrial sales means the sales of the production of industry in the United States and excludes agricultural production. The Simonds Saw and Steel Company derives its sales from industrial production and when industrial production is increasing over a period of time, this company's sales increase correspondingly. The company manufactures saws and machine knives for cutting all kinds of material on which saws and knives are used. It also manufactures special high grade steel in addition to making the steel required for its own uses. Through its subsidiary, The Abrasive Com-

pany of Philadelphia, grinding wheels and grinding materials are produced, and through another subsidiary, Wappat, Inc., in Pittsburgh, the company manufactures power operated tools, saws, drills, etc., for which hand tools have been used previously. The Simonds Guaranteed Cutter Head Company of Seattle, another division of the Simonds Saw and Steel Company, manufactures cutter heads.

Formerly lumber production was the chief source from which the company's sales were obtained. When this was the case, contracts awarded for building presented an excellent forecast for sales because at that time lumber production fluctuated very closely with building contracts and particularly with contracts for residential building. Since 1909, however, the production of lumber in the United States has been slowly decreasing, and recognizing this fact, the company added saws and knives for cutting metals of all sorts. After these new products were added to the company's list, a combination of the unfilled orders of the United States Steel Company and building contracts awarded gave a very satisfactory short-time sales forecast. It was also discovered about that time that sales fluctuations correlated very closely with the fluctuations in industrial production or in the volume of manufacture or simply with the volume of pig iron produced. A curve representing the monthly tonnage of pig iron produced since 1921 served very well as an index of company sales and as a result of a study, it was evident that for every ton of pig iron produced in the United States, this company received a certain amount in sales. This does not mean, however, that this certain sales volume comes directly from pig iron producers, but

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there was a definite correlation between the activity of pig iron producers and the company's sales activities.

At present, the volume of industrial production as reported by the Federal Reserve Bulletin is used for forecasting purposes. Since sales are derived from this production, it forecasts the trend of sales. The first problem, then, for an organization that seeks to forecast its sales is to discover some economic factor for which data is reliably and continuously reported and from which it derives its sales, and if this index can be forecasted or projected into the future as is done in this case with industrial production, then the sales will be forecasted.

When this company began studying this problem, the executives wanted to know what the total sales would be a year ahead; January 1 to January 1, or for a quarter ahead or for a month ahead. The company very soon gave up attempting to forecast the amount of sales in dollars for a particular period and determined to forecast the annual peaks and the annual low points in sales volume, also the cyclical peaks and the cyclical low points. These forecasts would give the company the downward trend from the peak to the low point in any year and the up trend from the low point to the peak in the following year. It also gave the up trend from the low point in the cycle to the next cyclical peak. Consequently, the company confined its efforts to forecasting major ups and downs and charted these movements as straight lines, connecting the peaks with the low points in major movements. This procedure, of course, did not show the minor movements, but it did bring out clearly the major movements. The company then applied this same

process to the forecasting of industrial production, and although it does not attempt to estimate the sales for any particular month or for any particular year, yet a study of the detailed charts indicates that yearly or monthly estimates can be made fairly accurately when the annual sales trend is known.

The Abrasive Company, which manufactures grinding wheels and grinding materials, derives a large percentage of its sales from automobile production, and therefore, if automobile production can be forecast, the sales volume of the Abrasive Company can be estimated.

This study was begun in 1919 and Alvan T. Simonds, President of the Company, felt very certain that increasing money rates, if continued, would soon be followed by a downward turn in business activity. This company, therefore, considers not only commercial paper rates, but also a less sensitive index, the Federal Reserve rediscount rate.

A study of commercial paper rates showed that each major movement is paralleled some months later by a movement in industrial production. Thus a major movement in commercial paper rates in each case since the war forecasts a major movement of approximately the same length in industrial production. According to Mr. Thompson, this lag has been regularly overlooked and from the beginning it has been a stumbling block in convincing others of the forecasting power of money rates. Two illustrations of the fact that money rates do forecast industrial production accurately and that these forecasts can be made and announced many months before the event, are presented in the bulletin entitled "Financial Budgeting Technique" read at a meeting of the

Financial Section of the American Management Association held in New York in May, 1926. In a leaflet entitled "Looking Ahead", published by Alvan T. Simonds in May, 1928, the declining movement from the peak in 1929 to a cyclical low point some time in the second half of 1930 was forecast.

In the consideration of the trend of industrial production, minor fluctuations are omitted and according to Mr. Thompson, the seasonal peak of sales generally comes in the spring for the majority of industrial organizations, except in years of revival from the cyclical valley to the next cyclical peak. There are other companies, however, such as manufacturers of radio sets and stoves, which report their seasonal peak in the fall. Consequently, the chart forecasts major trends in the volume of industrial production several months in advance, but at each turning point in money rates, there is of course some uncertainty as to whether the change in direction is to be a major movement or simply a minor movement. A careful study of the chart, however, shows that in every case the uncertainty was removed early enough to allow the forecast to be made many months before the change in trend of industrial production. These forecasts of major movements in industrial production will enable particular industries to forecast their sales if their sales are derived chiefly from industrial production or if their sales fluctuate with industrial production.

Any forecast is likely to be upset by war or great disaster, fire, flood or famine. Mr. Thompson does not imply that there will never come a change in the present cyclical movement or that the forecast made by money rates will always prove as reliable as it has since the war. Mindful of what

the past has shown to be true, it is necessary in each future study to check up as far as possible the forecasts made by money rates. These can be checked for instance, with the forecasts made by S. B. Koons, Statistician, Shoe and Leather Reporter, Philadelphia, Pa., which are based upon changing movements in the price of hides, or with the forecast made for the National Machine Tool Builders Association of Cincinnati, by E. DuBrul, or the forecast made by Dr. Lewis H. Haney for steel production and steel prices in "The Iron Age". If the forecasts made by money rates and all forecasts made by certain other methods point in the same direction, it is probable that the forecast is correct under normal conditions. It must not be forgotten, however, that back of changing interest rates are speculative movements as well as industrial movements.

Intertype Corporation of New York Plan

Mr. G. C. Willings, Vice-President of the Intertype Corporation of New York, describes in a booklet entitled "Sales Budget Practices and Principles" issued by the American Management Association in New York City, the methods adopted by this company in forecasting its sales. The Intertype Corporation manufactures a typesetting machine, called the Intertype. These machines are sold to the publishers of newspapers, job printing offices, and related businesses throughout the world. The corporation also produces a large volume of service parts, supplies and matrices; the latter being necessary for use in the Intertype machine.

The foreign trade, which represents a goodly share of the business, is handled through agents, but in the United States the company operates

through branch offices, the country being divided into four territories, each in charge of a branch manager, with the requisite number of salesmen under his jurisdiction. The branch offices are located as follows:

Eastern territory, headquarters--New York City
Middle Western territory, headquarters--Chicago
Southern territory, headquarters--Memphis
Pacific Coast territory, headquarters--San Francisco

The budgeting of sales of service parts and matrices is a rather simple matter. Statistics are kept by territories, which show the average yearly sale of machine parts and matrices for each machine in the field. Thus, from these figures, it is a fairly easy task to calculate probable future sales of machine parts and matrices, as the business naturally increases proportionately with the increase in distribution of machines. This procedure is literally a correlation problem. As an indication of the accuracy of these estimates, for the first half of a recent budget period, the sales in these departments exceeded the budget by exactly two per cent.

The budgeting of machine sales is not quite so easy, but here again statistics as well as records of past performances serve a useful part. Economic and business statistics have been compiled and kept reasonably up-to-date for each county in the United States. This information has been analyzed so that each county in the United States is placed into one of four classifications, according to the relative amount of possible business in that county. These classifications are indicated by the color of the respective counties on a map, as follows:

Blue indicates best.
Red indicates good.
Green indicates fair.
Yellow indicates poor.

The classifications were obtained from the averages of the total number of daily newspapers and trade papers, their circulation, and the average population per county. The map shows at a glance where the business must come from and where to concentrate the selling efforts.

Each plant included in these statistics is represented in the files by what is called a "Sales Folder". In this folder will be found all the data of sales value, with respect to the particular plant represented. For example, it contains among other things:

1. Information as to equipment in use.
2. Prospects of expansion.
3. Possibilities of replacing obsolete equipment of other manufacture with more modern machines, the product of this company.

In fact, this folder contains all the data obtained from the beginning of business and every sales move made to interest the prospective customer in the product, even to a report on each interview. All of this is helpful in determining the potential business in a territory, and forecasting probable future sales.

The first step in the preparation of the domestic machine sales budget is to ask each salesman to submit to his branch manager an estimate of the number of machines he can sell during the coming budget year. These estimates are submitted in conference with the branch manager, and at this time all available territorial data and statistics which form the basis for

the sales estimate, where necessary, are consulted and analyzed. Particular attention is given to those plants using obsolete machines of competitive manufacture, as a large part of the business comes through the replacement of such equipment.

As salesmen's compensation plans are largely based on certain fixed quotas for the year, it is of vital importance to the salesman that his budget of sales shall be thoughtfully worked out. When the branch manager reaches an understanding with each of his salesmen as to the probable sales for the ensuing year, he consolidates these estimates and submits them in person to the Vice-President in charge of sales, by whom they are carefully studied. Conditions in the territory are again reviewed, statistics consulted, and the budget adopted.

With the question of sales is also considered the matter of branch selling expenses, which includes three main divisions, namely;

1. Salesmen's compensation and expenses;
2. Salary and expenses of road mechanics;
3. Maintenance of branch selling offices.

At each of the branches there is maintained a supply depot where large inventories of parts and matrices are carried for the purpose of rendering prompt service to customers, and naturally there is considerable expense involved in maintaining the branch organization.

Detroit Steel Products Company Plan

The Detroit Steel Products Company considers not only past performance, but also sales potentiality, in establishing its sales estimate for budget and sales quota purposes. This company manufactures a building

material product adapted for various types of industrial buildings.

The following five factors are used in estimating its sales volume for each territory:

1. Population 20 points
2. Number of architects, engineers and contractors ... 25 points
3. Number of industries rated over \$10,000 25 points
4. Average of three previous years' estimates 20 points
5. Average of three previous years' orders 10 points

An index of 100 points is used to cover all the factors. These points are divided among the factors in proportion to the importance the manufacturer feels that each plays in determining the possibilities as indicated above.

The procedure as applied to a given territory is as follows:

First, the population of the territory is divided by the total population of the United States and the resultant per cent. is multiplied by the 20 index points. This gives the number of index points for population. Second, the number of architects and engineers and contractors in the territory is divided by the entire number in the United States, and this per cent. is multiplied by 25. In the same manner, the procedure is carried out with all the other factors, and for all the territories. The points for the entire number of sales territories is added together to get the total index points for the country.

The company quota is set up as a certain goal which expresses the amount of business which the officials think they can attain during the ensuing budget period. This amount is represented by the total index points in the United States. The share of the whole quota each part of the company, the territory, or agency is to carry, is established by computing the per

cent. of all the index points in the United States in each territory or agency. This per cent. is then multiplied by the total quota, which is expressed in dollars.

Standard Conveyor Company Plan

In the April, 1929, issue of the monthly magazine "System", Mr. R.D. Dinwiddie describes the Standard Conveyor Company's method of estimating its sales in connection with its budget procedure. This company computes by carefully compiled records, the sales possibilities of each territory. To each territory, then, is assigned the number of salesmen and the sales expense allowance compatible with the planned sales. Each salesman's monthly and weekly and sometimes even daily performance, indicated by the accounting department records, is checked against the sales quota assigned to him.

This company first considers the industrial census and lists every concern that offers a good sales opportunity. Previous sales are analyzed and through experience it is indicated that in a given line of industry, a company to be a good prospect must have a force of employees above a definite minimum. Cross-checking disclosed that the number of employees almost without exception corresponds with a credit rating of a given size -- varying, of course, with the line of business. Another measure of plant capacity below which this company's products can be of little service, is the connected horse-power, which runs uniformly at a minimum of 250; therefore as an example of a standard use in the case of a machine shop, a rating of \$200,000 and 250 connected horse-power defines a good prospect for the company's products. In the case of a woodworking plant, a rating of \$50,000

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to \$75,000 with 250 connected horse-power is considered a standard. This list of prospects, broken down by sales territories, is sub-divided into 51 lines of business. This constitutes a mailing list, and the basis for setting sales quotas. Through this method the company can figure the aggregate volume of business a territory should yield and the quantities of each type of equipment which it should require.

Of the 51 industries which this company lists, 23 yield 87% of the business. The percentage of total sales represented by the sales in one industry runs rather evenly from year to year. Consideration is also given to the specialization of equipment by industries. For example, an automobile plant uses more gravity roller conveyors than any other type of the company's products. A department store or wholesale house uses a correspondingly large number of spiral chutes. Consequently, an analysis of the sales indicates that in a given territory covered by a salesman whose ability is known, the company should obtain so many dollars worth of sales, on the average, to each automobile factory, each department store, each lumber yard, each wholesale drug house, etc. Through this method the dollar volume of gravity roller conveyor, spiral chute, power driven conveyor, portable equipment and pneumatic tube system is computed for the territory. By cross-checking the experience of different territories with any one type of equipment in a single industry, an appraisal is made of the ability of an individual salesman.

Experience has indicated a rather constant percentage of total business year after year for each type of product. These proportions are

as follows:

Gravity roller conveyors and wheel conveyors	25 per cent.
Combination conveying systems	35 per cent.
Gravity spiral chutes and fire escapes	10 per cent.
Pilers, sectional conveyors, tiering machines	10 per cent.
Belt conveyors	9 per cent.
Miscellaneous parts	9 per cent.
Slat conveyors	2 per cent.

This classification is the starting point in splitting gross quotas among different lines and the capacity of the company's plant corresponds almost exactly to these sales percentages.

For the purpose of a short term forecast, a study is made of proposals. This study enables the company to forecast the trend of its business for the immediate future. Experience indicates that ordinarily a proposal remains as such for two or three months before it develops into an order; also a definite proportion of proposals develop into orders. Accordingly, these executives have the materials to develop a formula for the next few months' business.

This company's procedure of forecasting its sales is based primarily on the actual sales possibilities of the territory. Careful records are then kept which show exactly how each territory and each factory department stands in relation to the predetermined figures. Constant checking of progress enables the executives to bend every energy in reaching the goal, the predetermined sales estimate.

Eaton, Crane and Pike Company Plan

Mr. J. R. Tobey, of the Eaton, Crane and Pike Company, Pittsfield, Massachusetts, has outlined a procedure for estimating sales in connection

with a budget program. He claims that before those responsible for the expenses of a concern can prepare their budget for the new year, they must know how much business it is estimated will be done. Hence, the sales manager must first prepare the sales budget. If statistics are kept for each sales territory, these figures will show the sales for each district; the district sales will be divided showing the sales by different lines or kinds of product; and these will be divided by salesmen.

The sales manager prepares a budget by districts with the help of each district manager. Consideration is given to the general business conditions, the possibility of expansion in new territories, the competition by other concerns, the introduction of new lines of product, the advertising program, salesmen's contests, etc. It is customary in preparing a sales budget to establish quotas for each salesman for each line and the salesman has his budget and knows how much is expected of him. If he does not sell his quota in a certain line, it is expected that he will explain to the district manager his reasons for failing to do so.

The experience of this company would indicate that it is very difficult to prepare a good sales budget without furnishing the sales department with complete information concerning the past sales. It is necessary for the sales department to have at least the following information:

1. Any changes in the policy of the company such as the establishment of branch offices throughout the country, changes in prices, advertising campaigns and the development of new goods.
2. Information concerning general trade or market conditions. This information may be obtained through

outside agencies or through industrial research carried on by the firm.

3. Reports showing sales for past periods.

Belden Manufacturing Company Plan

Mr. Harold V. Coes, Vice-President and General Manager of the Belden Manufacturing Company, has indicated in an article entitled "Some Essential Principles for Budgetary Control" that a sales estimate or forecast is based on the following information:

1. The amount and character of previous sales - analyzed.
2. The present and future market conditions, the trade situation - market analysis.
3. The executive plans, policies and administrative expense of the business.

It is evident in connection with these factors that if such information is not furnished to those executives responsible for the budget program, their estimates of sales volume, the starting point in any budget program, may be inaccurate due to the lack of information concerning the circumstances from which the company is expected to get its actual sales volume. Furthermore, it is not expected that the budget supplant good business judgment, and if at any time circumstances and conditions which were expected to be normal over the ensuing period should become abnormal, then the sales estimate, whether it be the total estimate or a readjustment of the component parts of the total, must be changed to meet the new economic conditions.

Miscellaneous Sales Budget Plans

The Dartnell Corporation has compiled the following tabulation of

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the main considerations used in establishing sales quotas and sales estimates by various companies.

<u>Name of Concern</u>	<u>Main Considerations in Setting Quotas</u>
Ford Motor Company	Population; wealth of community; nature of local industries.
Todd Protectograph Company	Population.
Burroughs Adding Machine Company	Territory possibilities based on business enterprise figures compiled by extensive research and investigating work; past performances.
The Conklin Pen Manufacturing Co.	Per capita measurements; records of past sales; ability of individual salesmen.
Westinghouse Lamp Company	District manager's estimates of sales for year; production capacity.
F. E. Compton and Company	Definite scale of increase over previous year's performance of each canvasser.
Vogan Candy Company	A daily order minimum, depending on territory, largely to encourage more calls.
Malone and Hyde, Inc.	Total sum of what salesman and sales manager decide each dealer should sell during year.
Arbuckle Bros.	Past performances.
United Drug Company	Past performances.
(Name withheld -- Paint and Varnish Industry)	Territory possibilities; conditions; ability of salesman; past experience.
Robt. H. Ingersoll and Bro.	Production; past records of sales by territories.
White Sewing Machine Company	Volume in previous years; conditions in territories.
The Addressograph Company	What salesmen think they can produce; volume, number of orders; call reports.

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<u>Name of Concern</u>	<u>Main Considerations in Setting Quotas</u>
True Shape Hosiery Company	Population.
Russia Cement Company (LePage's)	Five groups of products taking separate quotas based largely on sales of previous years and conditions.
The Beaver Board Companies	Per capita statistics.
Northrup, King and Company	Number of possible buyers in each territory estimated; time required for salesmen to cover.
George A. Hormel and Company	Sales for same territory and same period previous year.
Salisbury and Satterlee Company	Shipments of previous year plus certain per cent.
J. E. Porter Company	Volume of sales during past year; number new dealers developed; days worked and reported; direct sales; number of orders; average amount per order; percentage of sales expense.
Baker-Vawter Company	Bank and commercial census figures; conditions; past business in territories.
Kelly-Springfield Tire Company	Automobile registrations; production.
American Radiator Company	Past performances; population; conditions.
Duplicator Manufacturing Company	Past records; ability; estimated territory possibilities.
Mr. J. A. Willard of Bigelow, Kent, Willard and Company, Boston, Massachusetts, feels that many of the complex factors involved in the development of accurate sales forecasting, are the result of external conditions, information on which is available through printed statistics or is obtainable through a market survey conducted by the questionnaire or interview method. Internal factors should be readily available in the sales and other records	

of the company.

The Department of Commerce, as well as various State and University bureaus, are constantly furnishing information as to the possibilities of both domestic and foreign markets, and many valuable commercial surveys of specific marketing areas are available.

Mr. Willard suggests that a careful study of the data in the following books will form a satisfactory groundwork for application of ingenuity in sales forecasting in almost any type of business.

1. "A Guide to Publications and Activities Relating to Domestic Marketing" -- Department of Commerce.
2. "Commercial and Industrial Organizations of the U.S." -- Department of Commerce.
3. "The Market Data Book Containing a Directory of Industrial, Trade and Class Publications" -- Published by G.D. Crain, Jr., Chicago.
4. "The Source Book of Research Data" -- Devoted entirely to sources of reliable statistical information, edited by Lewis H. Haney.
5. "Retail Shopping Areas -- A suggested grouping of counties about 683 principal shopping centers, with 642 sub-centers indicated" -- Compiled by J. Walter Thompson Company, Chicago.
6. "A Study of All American Markets, Including all Cities and Towns of 1,000 Population or More in the United States" -- Published by The 100,000 Group of American Cities, Chicago.
7. "Sales Management" (Magazine) Yearly Reference Number -- Containing Index of Buying Power of the United States, Arranged by Counties.
8. International Magazine Survey.
9. Curtis Publishing Company Survey 1928--1929 based on circulation of the Saturday Evening Post, Ladies' Home Journal and The Country Gentleman.
10. R. L. Polk Business Census of 1926.

AN ECONOMIC SERVICE TO BUSINESS

This is one of numerous publications issued by the Policyholders Service Bureau in the interest of better management in business. The Metropolitan has good reason for desiring to contribute, so far as practicable, to improved practices in management. Effective management is a vital factor in the continuous and profitable operation of business enterprises and helps to bring about steady work and regular income for Metropolitan policyholders, who number more than one out of five of the general population. An even greater proportion than one-fifth of the employees in commerce and industry are insured by the Metropolitan Life Insurance Company. The relationship between prosperous policyholders and the company's progress is obvious.

Because of its great stake in the nation's economic life, the company has set up the Policyholders Service Bureau to carry out a program of economic service to business. The Bureau staff is made up of specialists in the various fields of management -- in business organization, office management, accounting and finance; in marketing, distribution, advertising and sales management; in production and personnel management; in business and economic research; in industrial health and accident prevention.

Investigations of subjects of current interest to business executives are continually being carried on by the Bureau's specialists in the various fields of management. Reports of such of these investigations as are of general interest are published from time to time. For additional information about the work of the Bureau or its published reports, address:

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Budgeting For Automobile Dealers

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POLICYHOLDERS SERVICE BUREAU
METROPOLITAN LIFE
INSURANCE COMPANY
HOME OFFICE . NEW YORK
Pacific Coast Head Office, San Francisco
English Branch Office . . . London
Canadian Head Office Montreal

BUDGETING FOR AUTOMOBILE DEALERS

NOTE This report was prepared to answer specific questions presented by a Group insurance policyholder of the Metropolitan. It was compiled with special reference to the situation confronting the organization for which the service was rendered, and is not intended as an all-inclusive discussion of the subject. The report has been made available for general distribution because it is believed that the contents may be of interest to executives confronted with similar problems. In the form here presented, references or material of exclusive interest to the company for which it was prepared, have been removed.

The report aims to present factually the methods and practices of business men in meeting the particular problem considered. Opinions cited are those of the contributors, and their use in the report does not indicate any endorsement on the part of the Metropolitan Life Insurance Company.

Prepared by
Policyholders Service Bureau
Metropolitan Life Insurance Company
New York City
1931
Reprinted 1932

BUDGETING FOR AUTOMOBILE DEALERS

An investigation of the methods of control adopted by automobile dealers and distributors disclosed that many of these agencies are operating on some definite plan for guiding their future activity. In the cases studied these plans range from a highly-organized budget plan for a large organization to some simplified form for the smaller business, sometimes not even set down in written form.

A controller of a large sales and service company in New York stated that his experience of twenty years in the automobile business had convinced him that adequate control of a large agency was next to impossible without some form of budgeting. The actual methods of maintaining such control might vary according to the set-up of the particular organization, he believed, but in essence there was usually a marked degree of similarity.

This agency conducts a wholesale and retail business with sub-agencies located in adjacent territory. A classification of accounts and standardized accounting procedure as developed and published in manual form by the manufacturer of the car handled in this case have been adopted. The purpose of this manual is to provide a practical and efficient accounting system for distributors and dealers. One of its principal advantages lies in the fact that through its use the operations of different dealers may be recorded on a comparable basis. Since the distribution of indirect expenses to productive departments might destroy the value of the figures for comparative purposes, redistribution of indirect expense has been eliminated, the purpose being to have only direct expense charged to departmental

operations and indirect or general expense deducted as a total from the operations of the business. The manufacturing company strongly discourages the opening of accounts other than those prescribed but suggests, if further information is required in the records, the instituting of sub-classifications of accounts already listed. This applies to assets, liabilities, operating, and expense accounts. As a basis for the Budget, this agency is using the prescribed manual of accounts with a few variations.

This distributing company maintains its wholesale business absolutely distinct from its retail business. It is felt that the conditions and circumstances of these two types of business are so much in contrast that valuable information and control would be lost if an attempt were made to merge the statistics. This company, therefore, operates its wholesale business as a distinct unit and keeps separate records for the income of this department. The expenses are applied directly against this income. Where there is a question of expenses that are incurred for both units, such as General and Administrative Expenses, the division is made in accordance with a formula which would represent the benefit of that expense to each division of the business. This system enables the management to evaluate the operations of each unit on its own merits.

THE SALES ESTIMATE

This survey revealed the opinion among those contacted that every dealer should forecast his own sales. No general rule or regulation can be prescribed for any one company. Each is confronted with its own problem of sales potentiality. The estimated sales should reflect the past experience

of the company and the potentiality of the territory in which the company operates. These potential sales are affected by the local business conditions, the standards of the community, the population, competition and other miscellaneous factors decidedly local in character. When a budget is to be planned in the company the executives who have a special knowledge of local conditions are called in conference to evaluate the company's past experience and its probable future. Through this interchange of knowledge, an estimated sales figure is obtained which, according to the judgment of these executives, reflects the probable income from sales for the coming year. This figure is the starting point of the Budget Plan. To estimate this sales volume is probably the most difficult factor in budgeting, and usually it is desirable that those responsible for producing this volume should have a voice in setting the quota. According to the experience of the company there is a high degree of correlation between these estimated and actual sales figures over a period of years. The actual figures varied from the estimated figures anywhere from 2 per cent to 7 per cent.

After the sales volume or probable receipts are estimated, the system of budgeting expense advocated by the National Automobile Dealers Association is generally followed in this organization. The executive responsible for this activity stated that he did not use the Association's budget plan in its entirety, since his own adaptation gave him a better control of his particular business, confronted as it was with its own peculiar conditions. The budget plan of the National Automobile Dealers Association is necessarily somewhat general in character as it is intended

to be used by all types of dealers and distributors throughout the country. It is a very helpful compilation as a starting point, however.

BUDGETING THE USED CAR FACTOR

This company has adopted a rather interesting and unusual method of treating the value of used cars turned in on new car sales. When a used car is traded, an account "Stores Used Cars" is charged with the allowance for the used car, and "Accounts Receivable Vehicles" is credited. An account called "Trade-In-Loss" is charged with 15 per cent of the resale value of the used car, and an account "Reserve Used Car Expense" is credited for the same amount. The account "Stores Used Cars" is charged with any repairs or alterations which enhance the value of the car, and the proper stores or labor account is credited for the same amount. When the used car is disposed of, "Accounts Receivable Vehicles" is charged with the total billing price, and the account "Sales Used Cars" is credited. To close the record of the sale, "Cost of Sales Used Car" is charged with the allowance price plus cost of repairs, and "Stores Used Cars" is credited for the same amount. "Reserve Used Car Expense" is charged with 15 per cent of the selling price set up at the time of trading, and the "Cost Used Car Sales" is credited with the same amount. Any deliberate over-allowance, sometimes necessary under special circumstances, should be charged to the account "Trade-In-Loss" at the time the car is traded. On the other hand any loss at the time of the sale must be charged directly against gross profits. The "Trade-In-Loss" account covers all excess allowances on used cars which are charged off at the time the car is taken in, but it does not include

any losses taken on used cars at the time of delivery. The account also includes the 15 per cent that is credited to "Reserve Used Car Expense" when the car is taken in. This 15 per cent is a charge against the New Car Department and an allowance to the Used Car Department. This system has the effect of treating the Used Car Department as incidental to the new car sales. If this allowance of 15 per cent is considered a charge to the new car sale and an allowance to the Used Car Department, the Used Car Department should be able to maintain itself. On the other hand, the Used Car Department is expected to operate at a loss of 15 per cent, providing no allowance is extended to it from the new car sale.

THE STUDEBAKER BUDGET PLAN

In connection with this investigation the treasurer of another large distributing agency was interviewed for his experience with budgeting. This company uses the standard manual "Budget System for Studebaker Dealers" published by the Studebaker Corporation of America. This system is more restricted than the plan of the National Automobile Dealers Association inasmuch as the budget plan is built up especially for Studebaker dealers.

The manual provides a classification of accounts from which may be developed a set of budget standards and prescribes the comparison of actual results with the standards thus developed. One of the main essentials of correct budgeting is to secure a dependable basis for the volume of new car sales. Emphasis is placed on the importance of a system of accounts that will produce final figures readily comparable with standard performance. The plan, as developed, is based on the following:-

The assumption that a certain number of new cars will be sold at retail during the year which conforms closely to actual past accomplishments. This sales volume is calculated in dollars by multiplying the average list price per car by the number of cars to be sold during the year.

Apply to this estimated total sales volume (in dollars) the expense percentage ratio, as given in the Budget Table nearest in the car unit volume to the number of cars expected to be sold as a minimum during the year. This will develop the amount of expense for each item in the expense account schedule allowed for the year for each account and for the total of all expense accounts.

Divide the amount of each expense account by twelve to determine the amount of each expense account for a month. Most of the expense accounts are of a non-variable or fixed nature during each month of the year, there being only two major accounts which are of a "floating" nature, that is, varying in proportion to sales volume of new cars. These floating items represent that portion of the account Salaries and Commission on Sales which constitutes payments to salesmen as distinguished from the supervision cost of selling cars and that portion of the advertising expense account which represents amounts paid to the factory for advertising.

From month to month, regardless of the number of cars sold, a comparison should be made between the amount of actual expense in detail with the amount of Budget Standards as determined in accordance with paragraph three above, to see whether operating expenses are in accord with the standards. The percentages of the actual expenses to the actual sales are of little consequence, only the actual amounts being of importance from month to month. When the year is completed, the ratios of the actual expense amounts to the new car sales at list will be in close accord with the budget percentages or ratios if the actual monthly expenses have been controlled properly.

According to the Studebaker Budget Manual, it is absolutely essential that retail and wholesale operations be accounted for separately.

Budget Plans have been published in manual form by the Studebaker Corporation of America for dealers and distributors selling from 25 to 1,000 new cars per year. This budget procedure, with slight modifications to reflect local conditions, is in use in the agency contacted and is giving satisfactory results.

According to the section of the country in which the dealer operates, there is a seasonal variation in sales volume. The following percentages of total sales volume for the various months as listed, is obtained by this local Studebaker agency.

January	4%	of the total sales volume for the year
February	6%	" " " " " " " "
March	11%	" " " " " " " "
April	13%	" " " " " " " "
May	13%	" " " " " " " "
June	10%	" " " " " " " "
July	9%	" " " " " " " "
August	9%	" " " " " " " "
September	10%	" " " " " " " "
October	6%	" " " " " " " "
November	5%	" " " " " " " "
December	4%	" " " " " " " "
100% Total volume for the year		

In developing its program, this company modifies the general Studebaker standards according to these percentages to give effect to the operating conditions in the territory which it serves.

OPERATING COSTS

The A. W. Shaw Company, recently merged with the McGraw-Hill Publishing Company, conducted an exhaustive investigation among 341 automobile dealers and garage owners in 23 states, and published cost items for doing business. The following figures reflect the total cost of doing business for dealers and garage owners in towns and cities of less than

100,000 as developed from this investigation. These cost percentages are based on total gross sales:

Rent.....	2.45%	Service.....	1.10%
Advertising.....	.55%	Warehouse, Storage & Expense.....	.60%
Heat and Light.....	1.40%	Salesmen's Salaries & Commissions	4.10%
Power for Shop.....	.25%	Salaries (Office & Shop).....	5.10%
Stationery & Supplies....	.35%	Unloading & Setting Up New Cars..	.40%
Insurance & Taxes.....	.80%	General Expense & Incidental.....	1.50%
Bad Debts.....	.25%	Instruction & Administration.....	.25%
Total		19.10%	

The following figures published by the same organization indicate the total cost of doing business for dealers and distributors in cities of 100,000 and above. These percentages are related to total gross sales.

Rent.....	1.60%	Service.....	.46%
Advertising.....	1.20%	Warehouse Storage Expense.....	.21%
Heat and Light.....	.43%	Salesmen's Salaries & Commissions	4.65%
Power in Shop.....	.07%	Salaries (Office & Shop).....	3.25%
Stationery & Supplies....	.17%	Unloading & Setting Up New Cars..	.49%
Insurance & Taxes.....	1.10%	Gen'l Expense & Incidentals.....	1.80%
Bad Debts.....	.23%	Instruction & Administration.....	.31%
Total		15.97%	

The same Bureau of Business Standards, Inc., of the Shaw Publications compiled the total costs of doing business for garage & service stations in cities of 100,000 and above. The figures are presented for the purpose of establishing a normal standard with which an individual's actual experience may be compared in measuring the efficiency of a specific business. It is noted, however, that strict comparability in operating conditions should exist in making such a comparison. The figures compiled by the Bureau of Business Standards, Inc., are as follows:

Rent.....	8.45%	Insurance & Taxes.....	.53%
Advertising.....	.95%	Bad Debts.....	.95%
Heat & Light.....	1.70%	Salaries (Office & Shop).....	19.40%
Power and Shop.....	.70%	General Expense & Incidentals....	.55%
Stationery and Supplies. .	.17%	Total.....	33.40%

These cost percentages are figured on the total net sales. Wages of employees and office salaries are expensive for the city service station, according to figures submitted to the Bureau. In connection with this last group, the Bureau had serious difficulties in finding representative companies with standardized methods. As the results of this survey, therefore, are merely indicative and not final, these figures should be used accordingly.

BUDGET PLAN OF THE NATIONAL AUTOMOBILE DEALERS ASSOCIATION

At the 10th Annual Convention of the National Automobile Dealers Association, Mr. Fancher, Accounting Supervisor for the Association discussed the studies which he had made of hundreds of dealers. In his discourse, "Get Your Profits First", he indicated six reasons why many dealers fail to make 5 per cent or even 3 per cent profit on sales volume. They are listed in order of importance as follows:

- Used cars.
- Unprofitable shop.
- Under capitalization.
- Bad credits.
- Improper bookkeeping and lack of expense control.
- Neglect of accessories and parts department as a source of profit.

In developing the subject "Improper Bookkeeping and Lack of Expense Control", Mr. Fancher warned against the use of averages and stressed the importance of a departmental set-up for determining the efficiency of each department. In discussing the budget plan, he also cited the following ratios as helpful in determining business efficiency.

Chart 1
Tests of Business Efficiency

Ratio net profit to sales.....	5%
" current assets to current liabilities.....	2 to 1
Turnover of Accounts Receivable.....	45 days
Turnover of Inventory.....	6 times yearly
Turnover of Used Cars.....	12 times

The second item should be watched very closely as it is of the utmost importance to the banker who contemplates loaning money to the dealer; the third is very valuable and is arrived at by dividing average daily charge sales into outstanding customer accounts receivable; the fourth one is arrived at by dividing the average inventory figure into the cost of sales; the fifth one is especially vital, as it indicates the used car trading policy of the management and the ability of the used car department to quickly dispose of those used cars that are taken in on new car sales.

In establishing his first sales quotas, the dealer has to give the subject much thought and study. He must go back over his records for previous years, he must study present conditions, his potential sales possibilities and the increase over last year which he wants to make. He must also give thought to a "balanced sales volume", which is of great importance and a subject to which dealers and distributors are inclined to give too little consideration. The sale of a certain volume of new cars, at retail, carries with it potential sales for a certain amount of parts, accessories and labor. For a retail establishment the percentages shown in Chart No. 2 are fairly average, and if adhered to, should give a satisfactory balance in sales among several departments.

Chart No. 2

This shows 60% of total sales new cars,
16% of total sales used cars,
14% of total sales parts, accessories,
10% of total sales labor.
100% Total sales volume for the year.

Mr. Fancher stated that the most practical way to set up sales quotas is on a quarterly basis, and in Chart No. 3 he shows a division by quarters which, although an average, gives the idea of prorating sales on a seasonal basis.

Chart No. 3

Division of Sales Quarterly
19% Total Sales January, February, March
35% Total Sales April, May, June
27% Total Sales July, August, September
19% Total Sales October, November, December
100%

A dealer may set up monthly figures in season and can govern his variable expenses of selling, such as commissions, advertising, etc., by those different monthly set-ups. Such a budget plan becomes more flexible and more practical.

Chart No. 4

SALES AND BUDGET SET-UP
For Dealer Doing \$500,000.00 New Car Volume

Sales		Expense Ratio To Dept. Sales
\$500,000.00	New Cars	10.5%
125,000.00	Used Cars	16.5%
100,000.00	Parts & Accessories	5.6%
75,000.00	Labor	25.0%
800,000.00	Total General & Administrative	4.4%
Net Profit, 5%.....		\$40,000.00

On Chart No. 4, Mr. Fancher sets up, as an example, sales and budget figures for a dealer doing at retail \$500,000 new car sales volume. The balance in sales recommended previously is maintained here. Having once established sales quotas, in a similar manner to that shown on this chart, the next step is to figure net profit on that volume, as that is of paramount importance, and set it aside first, so that the management will be sure of withholding that amount from the budget of expense. In this case it amounts to 5 per cent of \$800,000 worth of merchandise, or \$40,000 net profit. The next step then is to plan the operations so as to make these two goals attainable.

The cost of sales and gross margin next needs attention, and they are factors in business over which too few dealers and distributors have proper control, according to Mr. Fancher.

The example shown in the next chart is based on margins of 22 per cent on new cars, 25 per cent on parts and accessories and 50 per cent on labor.

Chart No. 5

22% on \$500,000 new car sales is.....	\$110,000
25% on \$100,000 parts and accessory sales is..	25,000
50% on \$ 75,000 labor sales is.....	37,500
Total Gross Margin on Sales	\$172,500

From this gross margin figure first deduct the net profit of \$40,000, leaving \$132,500 to budget in such a manner that it will pay all the expenses of running the business for the coming year. This total expense of \$132,500 is allocated on a percentage of sales basis departmentally. In the example shown, the Association Survey indicates that 10.5 per cent is an average

expense ratio for new cars for a business doing this volume. That amounts to \$52,500. To sell \$125,000 used cars will cost 16.5 per cent, or \$20,625. The parts and accessory expense will be 5.6 per cent of \$100,000, or \$5,600, and the shop overhead will be 25 per cent of \$75,000, or \$18,750. For a business doing a volume of \$800,000 a fair percentage of this amount for general and administrative expenses is approximately 4.4 per cent, which amounts to \$35,025. The total of these five figures equals \$132,500, the amount available to cover all expenses, providing for \$40,000 profit or 5 per cent of the sales volume.

One important item in the example just given is the quota of used car sales as compared to the quota of new car sales. In Chart No. 4 this ratio is shown as 25 per cent. From the studies of this phase of the dealer activity, the association believes that a dealer should try to purchase used cars only up to a point of his gross margin in the new car. The handling of a greater volume than this will entail investment of company capital for used cars, greater expenses, and greater loss in this department. Successful dealers are finding this method a practical way of answering the used car question, and these same dealers are turning their used car stocks twelve times a year. The following tabulation is an analysis of the total direct department expense.

New Car Department		
Commissions	5.5% of \$500,000	\$27,500
Advertising and Demonstrating	2% of \$500,000	10,000
Supervision, Servicing Guarantee, etc.	3% of \$500,000	15,000
Total new car Department Expenses	10.5%	\$52,500

Used Car Department		
Commissions	5.5% of \$125,000	\$ 6,875
Advertising and Demonstrating	5% of \$125,000	6,250
Supervision, Servicing		
Guarantee, etc.	3% of \$125,000	3,750
Loss on sales	3% of \$125,000	<u>3,750</u>
Total used car Department Expenses	16.5%	\$20,625
Parts and Accessories		
Salaries	3.5% of \$100,000	\$ 3,500
Packing, Wrapping		
Supplies, etc.	2.1% of \$100,000	<u>2,100</u>
Total Parts and Accessories Expense		\$ 5,600
Shop Department Expense		
Productive Labor (Mechanics)	10% of \$ 75,000	\$ 7,500
Non-Productive Labor (Janitor, Cleaning, etc.)	5% of \$ 75,000	3,750
Supplies, etc.	10% of \$ 75,000	<u>7,500</u>
Total Shop Department Expense	25%	\$18,750
General & Administrative Expenses		
Bad Accounts		\$ 775
Depreciation		750
General Salaries		15,000
Insurance		2,500
Interest		3,000
Legal Service		500
Licenses		300
Light, Heat, Power & Water		1,200
Other Expenses		750
Rent		7,500
Printing & Stationery		1,000
Taxes		1,250
Telephone & Telegraph		<u>500</u>
Total General & Administrative Expenses		\$35,025

STEPS IN ESTABLISHING THE BUDGET

The steps in establishing quotas and budgets are summarized as follows:

1. Study the market and its possibilities, and establish sales quotas for each department of the business, bearing in mind the necessity of a balance in sales.
2. Prorate those sales on a quarterly basis or monthly basis.
3. Determine the net profit desired.
4. Determine the gross margin and from this deduct the net figure, the balance remaining being the amount of the expense budget.
5. Allocate this budget to each department on a certain percentage ratio of sales, for expenses, this being the standard ratio used by the industry.

Having taken these five steps the one remaining is to divide the total expense allowed each department among the several expense account headings in that department. For example, 10.5 per cent of \$500,000 or \$52,500 was allowed for all the direct expenses of the new car department. An allocation of 5½ per cent, or \$27,500, is made for commissions, 2 per cent, or \$10,000, for advertising and demonstration expense and 3 per cent, or \$15,000, for servicing guarantee, supervision, etc. In a like manner each departmental figure of expense is prorated over the several classifications of expense arising within the department.

On Chart No. 6 is shown for the benefit of distributors what is believed by the National Association of Automobile Dealers to be an average budget and quota set-up.

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Chart No. 6
Sales and Budget Set-Up for Distributor

Sales		Expense Ratio to Dept. Sales
\$1,800,000.00	Wholesale	1.3%
350,000.00	Retail	20.0%
100,000.00	Used	13.0%
140,000.00	Parts, Accessories	8.0%
75,000.00	Labor	30.0%
	General & Administrative	2%
	Net Profit	3%

GROSS MARGIN AND EXPENSE BUDGET
For \$500,000 Volume New Cars

	Gross Margin	Exp. Budget
New Cars	22% \$110,000	10.5% \$32,500
Used Cars		16.5% 20,625
Parts & Accessories	25% 25,000	5.6% 5,600
Labor	50% 37,500	25.0% 18,750
General and Administrative		4.4% 35,025
Total	\$172,500	
Less Net Profit	40,000	
Expense Budget	\$132,500	\$132,500

Summarizing the review on the subject of accounting and expense control, there stand out clearly five factors that should be considered by every dealer.

- The productive value of complete accounting records.
- The necessity of a sound and complete accounting system.
- The value of the monthly comparative statement.
- The value of continually applying tests to figures which help determine efficiency.
- The benefit to be derived from establishing quotas on sales and budgeting expenses.

REVISION OF THE BUDGET

The principle of budget procedure is the forecasting of profits for a given period, and for this purpose the sales volume and expenses are estimated in advance. These forecasted figures serve only as goals which

the management believes can be attained under normal conditions. If extraneous conditions affect the company or the industry, a revision must be made of these forecasts, as the original estimate is made in light of normal conditions which are expected to prevail during the period for which the budget is planned. Under normal conditions, the management is in a position to judge the deviation of actual operations from the estimates, and in this way to control the business. Over a period of years, the accumulated experience of executives with budgeting methods tends to give them a more intimate knowledge of their particular industry and the effects of local conditions so that they are enabled to forecast with a surprising degree of accuracy their sales volume expenses and profits.

One agency executive warned of the risk in the arbitrary application of a budget program to a business in such a way that the management, guided solely by the budget, allows good business judgment to become dominated by the figures planned in advance. This factor is highly important inasmuch as budget figures or standards should not be followed blindly, especially when radical changes in the industry or in company policy affect fundamentally the proposed standards. This viewpoint was shared by all the executives interviewed in connection with this report. In one case it was shown where the budget figures had to be revised materially to meet the changed operating conditions which could not have been foreseen at the time the original budget standards were set.

Another case was mentioned wherein a dealer had been operating at a loss for three years and yet strictly on a budget plan. In reviewing the budget

procedure a high degree of correlation between the plan figures and actual figures were found with one exception, that was sales volume. Although conditions had changed materially, this dealer refused to change his budget appropriation on advertising to get the proper sales volume and consequently, adhering to his budget so far as expenses were concerned, operated at a loss. This is an instance where the budget was used to supplant good business judgment rather than to support it.

Other Metropolitan publications which may be of interest to readers of this report include the following:

ADVERTISING USED CARS
THE AUTOMOBILE DISTRIBUTOR AS A POSSIBLE FACTOR
IN SELLING AIRPLANES
BRANCH OFFICE ORGANIZATION & MANAGEMENT
CONSIDERATION IN REDUCING SALESMEN TURNOVER
EFFECTIVE CREDIT MANAGEMENT
ENCOURAGE REAL DRIVING IN YOUR COMMUNITY
FORECASTING SALES IN CONNECTION WITH A BUDGET
PROCEDURE
FUNCTIONS OF THE COMPTROLLER
FUNCTIONS OF THE TREASURER
IMPROVING DEALER ACCOUNTING PRACTICES
A MANUAL OF BUDGET PROCEDURE
THE MERCHANDISING OF USED CARS
METHODS USED BY RETAILERS TO MEASURE ADVERTISING
RESULTS
OPERATION AND CONTROL OF AUTOMOBILES FOR COMPANY
BUSINESS
ORGANIZING FOR A TRAFFIC SURVEY
POINT SYSTEMS FOR RATING SALESMEN

Copies may be obtained on request from Policyholders Service
Bureau, Metropolitan Life Insurance Company, One Madison
Avenue, New York City.

AN ECONOMIC SERVICE TO BUSINESS

This is one of numerous publications issued by the Policyholders Service Bureau in the interest of better management in business. The Metropolitan has good reason for desiring to contribute, so far as practicable, to improved practices in management. Effective management is a vital factor in the continuous and profitable operation of business enterprises and helps to bring about steady work and regular income for Metropolitan policyholders, who number more than one out of five of the general population. An even greater proportion than one-fifth of the employees in commerce and industry are insured by the Metropolitan Life Insurance Company. The relationship between prosperous policyholders and the company's progress is obvious.

Because of its great stake in the nation's economic life, the company has set up the Policyholders Service Bureau to carry out a program of economic service to business. The Bureau staff is made up of specialists in the various fields of management -- in business organization, office management, accounting and finance; in marketing, distribution, advertising and sales management; in production and personnel management; in business and economic research; in industrial health and accident prevention.

Investigations of subjects of current interest to business executives are continually being carried on by the Bureau's specialists in these various fields of management. Reports of such of these investigations as are of general interest are published from time to time. For additional information about the work of the Bureau or its published reports, address:

Policyholders Service Bureau
Metropolitan Life Insurance Company
One Madison Avenue
New York City

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RECEIVED MAY 1 1921

Budgeting for the Bank

Report No. 65



METROPOLITAN LIFE INSURANCE COMPANY

HOME OFFICE—NEW YORK

PACIFIC COAST HEAD OFFICE—SAN FRANCISCO

CANADIAN HEAD OFFICE—OTTAWA

BUDGETING FOR THE BANK

Prepared by
POLICYHOLDERS' SERVICE BUREAU
BUSINESS MANAGEMENT SECTION
GROUP INSURANCE DIVISION

(January, 1925)

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BUDGETING FOR THE BANK

The Purpose of the Budget

Industrial and commercial organizations are employing the budget to

- 1 - Effect economies.
- 2 - Establish responsibility.
- 3 - Insure continuity of operation.
- 4 - Promote better industrial relations.
- 5 - Make the most of capital resources.
- 6 - Eliminate peaks in expense and income.
- 7 - Analyze sales opportunities.
- 8 - Coordinate sales and production.
- 9 - Purchase most advantageously.
- 10 - Reduce inventories.
- 11 - Provide for future growth, and
- 12 - Insure a fair and consistently maintained profit.

This is not the place to describe how these desirable conditions are brought about, convincing evidence of which are to be found in the various budget studies of specific industries developed by the Policyholders' Service Bureau.

Budgeting, in substance, consists of four major operations:

- 1 - Reviewing past experience and analyzing good and bad points therein.
- 2 - Framing a program which seems feasible to be carried out for a definite period of time, let us say, for three or six months.
- 3 - Providing a simple scheme of summary records to keep track of the experience with the execution of the plan.
- 4 - Organizing a group of responsible executives, whose business it shall be to follow through the undertaking, to check results, to adjust estimates and to see to it that action is taken on the facts that the budget program reveals.

The Forms required are briefly these:

- 1 - A summary statement of operations, comparing one period with another and showing the expense divided by departments, functions and elements.
- 2 - Statement of results obtained, expressed in a way to test propriety of current expenses. The results can be shown as goods manufactured, labor, hours, cost per dollar of products and similar units, appropriated for specific industries.
- 3 - An analysis of the organization showing increases or decreases in force:
 - (a) for the overhead or executive, and
 - (b) for the operating and producing staffs.

Banks and Budgeting

Budgeting is a system of reviewing, checking, and enforcing plans. It cannot be done by a system of accounts or clerical subordinates, but must be the work of competent executives who know the meaning of the facts and who are able to judge results.

Few banks are operating on a budget system, though a deep interest in budget procedure exists in banks throughout the country. For example, a bank in Boston writes:

"We do not operate under a budget system, but are interested in the study you are making of this subject and should appreciate your sending us a copy of your conclusions when you have completed your investigations."

while the president of a bank in Iowa, states:

"I am very much interested in the budget, and will be glad to have all the information on the subject that you can give me. I might add that we have frequently discussed the budget system plan but as yet has done nothing."

The head of a famous New York institution adds:

"While we have been more or less considering a Budget Plan, yet we really have not developed anything here with would seem to us to be at all useful in the survey you contemplate."

"Should anything concrete develop as a result of your investigations, we would be glad to be advised in order to further our own consideration of the matter."

Along the same general nature are communications received from a second bank in Iowa:

"We have considered the adoption of a budget several times but have never completed arrangements for it. We are much interested and would appreciate it if you will send us a copy of your study upon its completion."

and a bank in Minneapolis:

"We have been contemplating the installation of a budget system for some time, but have not yet put our ideas into operation. We note that you expect to publish the results of your study at an early date, and we shall be much obliged if you will send us a copy at your convenience."

A Los Angeles banking institution has proceeded somewhat further in its budget studies:

"Studies have been in process for some little time, from the results of which it is anticipated that in the near future the institution will be operated under budget control.

....." a budget has been set up covering advertising, publicity, and commercial development, or, the new business departments.

"As at present contemplated, it is planned to eventually budget our expenses, including administration, overhead, policy, and non-productive as well as operating costs."

while banks in New York City, in the West Coast, Minnesota, and Detroit, have made tentative budget starts in the manner described below:

"It has never been our practice to budget expenses in connection with our operation other than to estimate the annual salary requirements of the several departments, a figure which, of course, must be adjusted should there be any considerable change in the volume of business handled."

....."this bank does not operate under a budget system, nor have we made any attempt to budget deposits and loans, or expenses and estimated net income. We allow a certain budget for advertising purposes and estimate carefully our operating expenses, including interest paid, but have no forms covering the operation of a budget system."

.....

"We are operating under a budget system only as to annual donations and the cost of a new business department.

"We do not attempt to budget deposits and loans, as well as general expenses and estimated net income.

"Our budget as previously indicated applies to expenditures in the way of a new business department, which covers all the advertising expenses of the bank and annual donations.

"A budget system for the purposes for which we use it is of great advantage to us in making our annual contracts for advertising and puts the control of this character of expense as well as the policies under which the department is operated, directly under the supervision of our Executive Committee."

.....

What The Bank Budget Should Do.

Those closest in touch and having the most experience with banking administration, feel that any budget suggestions must be of a simple nature, at least as a start.

A budget system should

1st - Give the executives facts for the impressions upon which they now rely in judging efficiency of departments.

A department may have a very tidy appearance and be free from complaints, and yet be operated most extravagantly. With definite figures before him and justification therefor, the banking executive will have a sure test of a department's efficiency.

2nd - Establish responsibility of those in charge of spending services.

It has a sobering effect upon chiefs of departments where they know that they are held responsible and charged with space, equipment, and with number of persons in their employ, and it is even known to happen under budget administration that department chiefs have given up expensive space feeling that they could get along just as well with less and they even reduced the number of personnel.

In the matter of equipment, it is false economy to operate on too close a margin. A few machines in reserve will make for a substantial reduction of the waiting time when machines break down.

The importance of organization for budget purposes cannot be over-emphasized. Preferably the president, or someone immediately under him, should be in charge of the budget and it should not be delegated to a subordinate official. To the presidents the chiefs of the spending services should report, at least once a year, what they expect to do the following year. In the spending services themselves committees should be formed cooperatively to work for economy. Once estimates have been accepted they should not be regarded as appropriations.

Departments should be held to strict accountability, at least once in three months, for their performance. Where estimates are exceeded, explanations should be given. Perhaps the proper handling of increased volume of business necessitated such increased expenditure. On the other hand, the mere fact that a department has gone below its allotment should not pass unnoticed. It may be that the service to customers is suffering and dissatisfaction caused, or it may be the volume of business has so much declined that even greater savings should have been possible.

A budget system will very soon develop tests for advertising expenditures upon which there is now a feeling that no adequate method exists to judge their return.

A budget system will help formulate some definite program for the New Business Department which, in a number of cases, leads a sort of happy-go-lucky existence.

OPERATING COSTS AND PROFITS IN 1923

A COMPOSITE PICTURE OF ALL MEMBER BANKS IN FEDERAL RESERVE DISTRICT I.

Grouped According to Size

Gross Loans and Investments	(423 banks)
Typical bank	TOTAL
<u>Percentages of Loans & Investments</u>	%
Interest and Discount Earned	5.6
Other Earnings	.4
GROSS EARNINGS	6.0
Salaries and Wages	1.1
Interest on Deposits	2.0
Interest on Borrowed Money	x
Other expenses, Taxes, etc.	1.1
TOTAL EXPENSES	4.2
NET EARNINGS	1.8
Net Losses charged off	.4
Dividends paid	.8
Net Reserves and surplus	.6
Other Ratios:	
EXPENSES TO GROSS EARNINGS	70.0
Wages to Gross Earnings	18.0
Interest on Deposits to Gross Earnings	33.0
Net Earnings to Capital, Surplus & Deposits	1.7
TIME TO GROSS DEPOSITS	34.0
Capital & Surplus to Gross Deposits	16.0

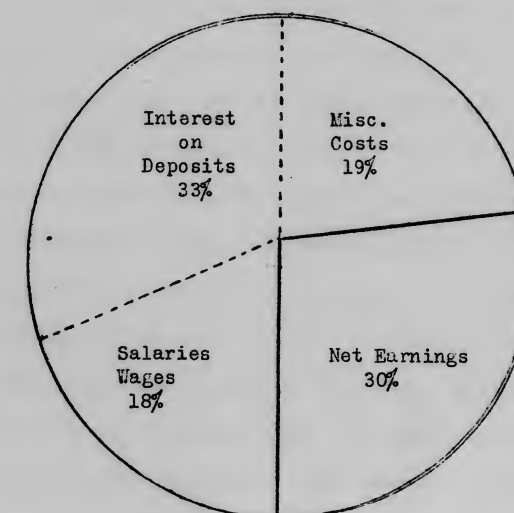
x - Less than .05%.

A budget system will promote a further analysis of the profitable character of accounts. How many banks realize that the relative activity or inactivity of an account, as well as the size, should determine its desirability?

A budget system will tend to establish ratios of expenses in greater detail but of the same general character, towards which the work of Frederic H. Curtiss, Chairman and Federal Reserve Agent of the Federal Reserve Bank of Boston is tending. For example, on the following page is a statement of Operating Costs and Profits in 1923 for 423 banks. Why should not a bank carefully establish such ratios based upon its own experience?

The above is a beginning, and only a beginning, to the kind of thing to which the budget leads.

DISTRIBUTION OF EACH DOLLAR OF GROSS EARNINGS
OF THE TYPICAL BANK



Typical Bank Budgets

The Guaranty Trust Company of New York was, perhaps, the first institution to make public its Budget of Expenses. Such budget was divided into two main classifications - Expenses of Securing Business, and Expenses of Transacting Business. Under the Expenses of Securing Business were such departments as New Business, Publicity, and Bond; while the Expense of Transacting Business were divided among Current Operating, Fixed by Policy, and Overhead. The expense forecasts of the Guaranty Trust Company provided for a Monthly Appropriation Sheet and Monthly Cumulative Statements, giving the comparison of actual and planned expenses.

Of the same general character is the budget system of the Northern Trust Company as described to the Policyholders' Service Bureau by S. C. Stallwood, its Second Vice-President.

About November 1st of each year the bank begins to make up its estimate of expenses for the following year. The Auditor, who is in charge of administering the budget, goes over the expenses with the Chief Clerk of each Department, and they together make up an estimate for the next year. The estimate of the Banking Department, for example, is arrived at by collecting estimates of expenses from the head of each sub-division of that department; the heads of the transit, clearings and bookkeeping divisions each make up an estimate of their collections and submit such estimate to the Auditor and Chief Clerk. After the Auditor and Chief Clerk have passed upon the figures, these are taken up for additional checking by a senior committee.

* Salaries which are such a large item of banking expenses, are budgeted separately.

Forms and Records

Form 1, herewith, is an example of a department expense budget. Expenses which are incurred for the benefit of the bank as a whole and cannot be charged directly to any one department, are separately estimated. In determining the budget policy for items, such as advertising, club membership, reserves for pensions and allowances for employees, and welfare matters, the judgment of a committee headed by the President is secured.

Form 2 is used as an estimate for Undistributed Expenses.

The Northern Trust Company feels that the greatest advantage it secures from the budget system is that it is able, at the beginning of each month, readily to compare the actual expense for the month with the proportion of the budget available therefor, and also that the Chief Clerks and Division Heads are very careful not to incur expenditures which are not absolutely necessary.

Form 3 shows a Comparative Statement of Expenses.

	Sum	Total	Last	Over
	North	to	Year	or
	Last Yr.	Date	Same	prior
			Date:	Under
			ten	
Directors Fees	:	:	:	:
Officers Salaries	:	:	:	:
Employees Salaries	:	:	:	:
Sick Leave	:	:	:	:
Supper Money	:	:	:	:
Legal Services	:	:	:	:
Auditing	:	:	:	:
Medical	:	:	:	:
Improvement	:	:	:	:
Trev. Exp.Auto Hire and Car-	:	:	:	:
Postage	:	:	:	:
Telephone and Telegraph	:	:	:	:
Express and Insurance	:	:	:	:
Office Furniture and Equip.	:	:	:	:
Stationery and Printing	:	:	:	:
Insurance	:	:	:	:
Memberships	:	:	:	:
Entertainment	:	:	:	:
Boks, Newspapers & Market	:	:	:	:
Miscel. Office Expense	:	:	:	:
Donations	:	:	:	:
Advertising - Newspaper	:	:	:	:
Other than Newspaper	:	:	:	:
Circularizing Booklets, etc.	:	:	:	:

EXPENSES (Continued)

UNDISTRIBUTED FOR 192__

	Same Me. Last Yr.	Total to Date	Last Year to same Date	Appre- priation	Over or Under
Postage					
Misc. Novelities and Calendars					
Electrics, Designs and Compe.					
Pensions					
Lunch Room					
Lectures, Banquets, and Classes					
Employees Uniform					
Employees Advances					
Trav. Exp. Advances					
Rent					
Stock					

Form #1 - b

Form #2 - a

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		Same Mo:	Total	Last Yr.:	Appre- Over
		Last Yr.:	to Date	the same	prici- or
			Date	Under	
Supper Money	..	..	..	..	..
Legal Services	..	..	..	..	..
Medical Services	..	..	..	..	..
Real Estate and Tax Exp.	..	..	..	..	..
Cleaning House Fees	..	..	..	..	..
Service	..	..	..	..	..
Trav. Exp. Auto Hire and	..	..	..	..	..
Carfare	..	..	..	..	..
Telephone and Telegraph	..	..	..	..	..
Postage	..	..	..	..	..
Express and Insurance	..	..	..	..	..
Auto Supplies	..	..	..	..	..
Stationery and Printing	..	..	..	..	..
Customers Supplies	..	..	..	..	..
Office Furniture & Equip.	..	..	..	..	..
Insurance	..	..	..	..	..
Membership	..	..	..	..	..
Entertainments	..	..	..	..	..
Books, Newspapers and Mkt.	..	..	..	..	..
Rep.	..	..	..	..	..
Mercantile Agcy. Subs.	..	..	..	..	..
Misc. Office Expense	..	..	..	..	..
Advertising - Newspaper	..	..	..	..	..
Other than Newspaper	..	..	..	..	..
Circularizing Booklets,	..	..	..	..	..
etc.	..	..	..	..	..
Postage	..	..	..	..	..

EXPENSES (Continued)

Form #2 - b

Form #3 - a

Form #3 - a

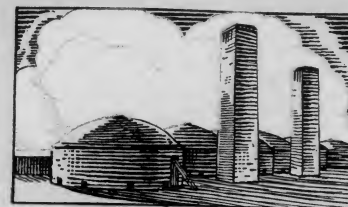
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COMPARATIVE STATEMENT OF EXPENSE (continued)

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Form #3 -b



BUDGET METHODS OF THE BRICK AND CLAY INDUSTRY

POLICYHOLDERS SERVICE BUREAU
METROPOLITAN LIFE
INSURANCE COMPANY
HOME OFFICE • NEW YORK
PACIFIC COAST HEAD OFFICE • SAN FRANCISCO
BRITISH ISLES HEAD OFFICE • LONDON
CANADIAN HEAD OFFICE • OTTAWA



BUDGET METHODS
of the
BRICK AND CLAY
INDUSTRY

Policyholders Service Bureau
METROPOLITAN LIFE
INSURANCE COMPANY
HOME OFFICE—NEW YORK
Pacific Coast Head Office—San Francisco
British Isles Head Office—London
Canadian Head Office—Ottawa

BUDGET METHODS
of the
BRICK AND CLAY
INDUSTRY

Policyholders Service Bureau
METROPOLITAN LIFE
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FOREWORD

BUDGETING has become an important tool in the hands of present day business executives. Numerous examples of the effective application of budget principles within specific industries are available. The purpose of this report is to present in factual form the budgeting principles and methods which have been developed and applied successfully by some manufacturers of brick and clay products. The report is limited to a presentation of the facts so collected, with the thought that they may have some application to other organizations in this industry.

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BUDGET METHODS of the Brick and Clay Industry

TO DETERMINE THE EXTENT to which budgeting methods have been successfully applied in the brick and clay industry, the Policyholders Service Bureau conducted an original investigation among representative organizations of this industry. Although this investigation disclosed a tremendous interest in the subject among brick and clay manufacturers, it indicated that budgeting principles have not been adopted to any considerable extent by the industry as a means of planning and controlling future operations. A number of reasons have been advanced to account for this condition. First, the wide variety and range, both as to style and type of products manufactured within a single plant, present difficulties in maintaining operations according to definite schedule. Moreover, this industry is directly affected by the rapidly changing conditions in those industries and trades which comprise its principal markets. Other factors cited include the definite limitation of production operations to kiln capacity, and the danger of unbalanced

stock. These points are well stated by one executive in the following words:

We have found it very difficult to apply it (*the budget*) to our business, for the reason that we manufacture so many different products and it takes thirty days, from the beginning to the end of the process, to make and ship any of these products. The only way we can be in position to give the right kind of service, is to keep our stock as well balanced as possible, even though we have to exceed our appropriation for manufacturing.

Another difficulty is that the cost of a product is so largely affected by the volume of business.

Despite these difficulties in numerous instances ceramic manufacturers are operating in accordance with a carefully planned program, based on budgeting principles. In some cases no attempt has been made to apply budgetary control to all activities but rather to concentrate on some particular phase with satisfactory results. Apparently the greatest progress has been made in the field of production, through the development of scientific standard cost systems.

STANDARDIZATION AND SIMPLIFICATION OF PRODUCT

THE BRICK AND CLAY industry, through its activities in the direction of simplification and standardization of product, has gained an economic advantage by the application of scientific statistical procedure on a co-operative basis.

The National Paving Brick Manufacturers Association, cooperating with the Department of Commerce of the United States,

undertook a survey of the shipments for a seven-year period, from 1914 to 1920 inclusive, of every manufacturer in the country then known to be making vitrified paving brick. This survey showed that sixty-six varieties and sizes of paving brick were being manufactured and shipped. One variety constituted 38.8 per cent. of the total shipments for a single year, while another comprised

less than .005 per cent. The results of the survey justified the elimination of fifty-five of these varieties and sizes. In 1927, the number was further reduced to five through the activities of a "Permanent Committee on Simplification of Variety and Standards for Vitrified Paving Brick," which was established by the Department of Commerce and was composed of representatives of producers, consumers, the engineering profession and the governmental departments.

The adoption of simplified products re-

A BASIC PROCEDURE IN DEVELOPING A BUDGET

THE DEVELOPMENT of a comprehensive budget for the brick and clay industry involves a consideration of the following basic factors:

1. The budget period, that is, the period for which estimates and standards may be made.
2. The minimum profit which is considered essential and which ultimately will be distributed as dividends, added to surplus or reserves, or reinvested in plant or property.
3. The volume of sales, both in quantity and cash value, classified in groups which are likely to be affected by similar economic conditions during the budgeting period. This projection must be considered in the light of the sales effort to be expended.
4. The selling and administrative costs of the anticipated sales volume.
5. The production cost of the anticipated sales broken down into departments and coordinated with the groups as considered in the sales projection.
6. The additional financing, if any, which will be necessary to establish the anticipated sales and production program, including the cost of possible additional plant facilities.

According to these six basic factors, a tentative program may be prepared and ultimately developed into a final budget, ad-

duced the manufacturing costs in the case of one manufacturer at least six per cent. Five companies reported resulting reductions in inventory; three noted the elimination of manufacturing difficulties; one reported increased turnover of its stock; one, lower selling costs; one obtained the advantages of shipping direct from the kiln in many instances; and ten stated that worthwhile savings had been effected. These results indicate in a small way the advantage of economic investigation or research as applied to an industry.

justed to coordinate the various functions of the business. Such a plan, broken down into monthly periods to permit frequent comparison with actual operating results, presents to management a projected view of the value of its executive policy.

The use of cost information for current control, rather than mere history, gives greater assurance of profitable sales and minimizes the uneconomical uses of capital for undue expansion of plant to meet temporary requirements. It also prevents unwarranted investment in work-in-process caused primarily by lack of proper production control, the financing of customers through excessive credits, and the irregularity of plant utilization through uneven sales demand.

Through adequate statistical records and budgetary control, responsibility for each function of the business is definitely placed and coordinated with other activities to effect a unified program. No single decision of any consequence is reached in one department without the consideration of its probable effect on the budget in another.

THE BUDGET PERIOD

THE BUDGET PERIOD is usually devised to conform more or less to the natural business period of the industry in question. In a specific case the period selected will depend largely upon the business risk involved, the stability of the market, the production methods in use, the processing interval, the normal selling season, the methods of financing, the length of the accounting period and the availability of statistics regarding past performance.

This survey has indicated two periods in general use for budgeting purposes; viz.: a long-time period, generally a calendar year; and a short-time period, ranging from one week to one month, depending upon the circumstances surrounding a particular business.

Through yearly estimates, approximate activities can be planned for a period that will embrace a full range of seasons. This permits the determination of general policies. Through weekly or monthly estimates executives are able to control immediate operations, to make a frequent comparison of performances with standards and to adjust operations for future periods.

Apparently the extent of a company's distribution has an important bearing on the period employed. The weekly period is used by both the Western Brick Company, a face brick manufacturer, and by the Richard C. Remmey Sons & Company, a fire brick manufacturer, whereas Harbison & Walker Refractories Co., serving a larger geographical area, projects its estimates on the basis of a year and also a month. Companies that depend on a limited distribution area are inclined to consider a shorter budgeting period, since the sales are affected more by conditions prevailing in that territory. Companies with a wider distribution area may consider a longer budgeting period as a master plan, with shorter periods to control immediate operations. The broader distribution area has a tendency to minimize violent sales fluctuations.

The Laclede-Christy Clay Products Company, manufacturing fire brick and clay products, first planned their budget for a six-months' period, but subsequently expanded this period to a full calendar year as a long-term program broken down into quarters for a short-term program.

THE BUDGET UNIT

INASMUCH AS THE complete budget program of an individual company is practically a projected profit and loss statement and balance sheet, the necessity for estimates that will ultimately reflect the activities in terms of the total dollars involved, is apparent. Budgetary control is sometimes facilitated, however, where it is possible to adopt some standard unit or units of measure. These

may be used as a basis for the development of unit costs as standards of achievement.

In the brick and clay industry, the units most frequently employed for this purpose are "per ton" or "per thousand" bricks, the selection in each case depending largely on the characteristics of the products involved. Thus, the Laclede-Christy Clay Products Company of St. Louis has adopted "per

thousand" bricks as the unit of measure for all products of its fire brick department, where there is general uniformity in size. However, the ton is used as the budget unit for all specialized products; sewer pipe, etc.

The various products of the Murphysboro Paving Brick Company were found to vary in weight from 1.7 tons to 5.15 tons per thousand. In order to compensate for this variation, all budget estimates are projected on a tonnage basis.

THE SALES ESTIMATE

DETERMINATION of anticipated sales for the period under review is generally looked upon as the first step in the development of an industrial budget program. This is understandable when it is considered that all activities of a business must be governed, to some extent, by the income to be earned. In projecting sales, due consideration must be given to prevailing general business conditions as they affect the particular industry. In other words, the sales estimate may be considered as the result of an analysis of market conditions and potentiality combined with a consideration of the past performance of the company. Consideration is also given to the annual growth or trend, the seasonal element, the business cycle and other fluctuations which may be expected during the ensuing period.

For the purposes of forecasting, products are classified in groups which are deemed to be affected by the same set of economic conditions. The total sales, thus estimated, are then broken down into sales quotas for territories and for individual salesmen. In the development of a sales program, both in terms of total sales and of individual quotas,

In planning its sales program at the beginning of each period, the Western Brick Company of Danville, Illinois, undertakes to forecast the total quantity of brick to be sold during the ensuing period. All types and shades are combined into one composite figure and for this calculation, as well as for all subsequent comparative purposes, tile and similar products are converted into their brick equivalents, through a standard formula developed for this purpose.

this investigation disclosed that the following factors were given consideration in individual cases:

1. Past Records

This factor always has been considered in making an estimate as it indicates the trend of past accomplishment of the existing organization. It is not always a controlling factor, however. Over a period of a year and sometimes in a shorter period, conditions may change to such an extent in a certain territory that the preceding year's record is entirely inconsistent with what may reasonably be expected during the ensuing year. The consideration of past records alone as a basis on which to make estimates is not usually sufficient as evidence of the potential sales in a territory.

2. Building Permits Issued

In the ceramic industry, statistics, based upon building permit records, present an index of the potential demand for a company's product in a certain territory, and are valuable for study and analysis. The comparison of such statistics with past records shows the extent to which a company organization has succeeded in supplying the available demand within a territory.

3. Transportation Charges

In estimating the potential demand of a territory which can be supplied by any one com-

pany, a determination of the economic shipping distance is important. Other things being equal, a company marketing its goods nationally cannot normally expect to supply the same percentage of the requirements of all localities nor to compete with companies more favorably located from the standpoint of shipping costs. It has been found that transportation charges on a heavy product sometimes limit a company to the immediate vicinity of its own plants, and therefore the sales estimate must be considered in the light of these prevailing conditions.

4. Dealer Psychology

In an industry which utilizes dealer or jobbing outlets for any considerable portion of its distribution, as does the ceramic industry, it has been found that, in fixing quotas, the personalities and qualifications of the individual dealers involved must be taken into consideration. The wide-awake dealer or broker is in a better position to secure an adequate percentage of potential sales in a territory than one who lacks these qualifications. This factor is generally indicated in the company's past sales records.

5. Miscellaneous Fluctuations

From time to time during the year, weather conditions and other circumstances beyond human control may necessitate adjustments of the original quota. In planning a sales estimate, experience has shown that an analysis of past records will reveal an average miscellaneous fluctuation which can be expected to exist during the ensuing period, and which should be taken into consideration in the budget program.

The Western Brick Company not only projects its sales at the beginning of the period, in terms of the total quantity of bricks to be sold during the year, but also undertakes to fix the average profit per thousand bricks sold. After the composite sales volume has been determined, this estimate is broken down, by types of product, by territories, and by individual dealers. Each dealer is definitely assigned a quota for the year,

although he is not notified in every case of the amount.

After the quotas have been set, a comparative weekly statement is prepared showing to what extent estimates are being attained and to what extent existing conditions may be expected to prevail during the balance of the budget period. From past experience, the Western Brick Company has learned that a certain percentage of the yearly sales should be on record by a definite date. At this time a careful analysis and comparison is made, and the extent to which the prescribed program will be accomplished is rather definitely indicated. Hand-to-mouth buying and the increasing dominance of style and design have added greatly to this company's difficulties in forecasting its sales accurately. Fifty per cent. of the bricks shipped are of shades and blends created within the preceding year. The remaining fifty per cent. may be considered as staple products. By producing these for inventory during the off season, it has been possible to stabilize production, with resulting lower production costs.

The Murphysboro Paving Brick Company estimates its sales by months, after making a careful survey of market conditions. The production schedule is coordinated with these sales estimates. This company has developed its business over a period of years and the executives are in sufficiently close touch with conditions to forecast within reasonable limits the probable building operations within their distribution area. In connection with the sales budget each jobber is interviewed quarterly for an estimate of the tonnage to be expected from his territory. These estimates, or opinions, give an indication of the approximate sales to be expected during each month of the year.

A company located in the Middle West, operating partially on a budget, estimates its sales for the coming year both in thousands of bricks and in dollar value. The activities of this company are limited to a few states. Within a certain radius, direct sales to the dealer trade are secured through salesmen and, beyond this territorial limit, distribution is secured through jobbers. In preparing these estimates, consideration is given to the following:

(a) *Past Records*

Past records are particularly valuable in indicating the seasonal fluctuation to be expected during the months of the ensuing budget period.

(b) *The Outlook for the Building Industry*

Various economic, forecasting and statistical agencies are utilized in this connection. The Building Statistics Reports, which classify building operations as residential, educational, office building and commercial, have been found particularly valuable in figuring potential demand. Constant contact is maintained with dealers and salesmen to evaluate local business conditions.

(c) *Changes in Company Policy*

In estimating sales, consideration is given to contemplated changes in the company's policies, whether of a general nature or restricted to one special activity, such as sales. These would include additions to the existing line which may be expected to increase sales volume by opening new markets. The sales organization to be maintained during the budget period is also a factor, inasmuch as an increase or decrease in sales personnel may be expected to affect the sales volume.

On the basis of the above conditions, weighted properly in accordance with their importance, the sales are forecast and a quota is set for each community for each month in the year. A quota for each state for each period is built up by combining the community records. These figures, of course, are frequently adjusted to new conditions as they develop. For example, a strike in the building trades in any one locality may

seriously affect any pre-arranged sales quota. A daily report is prepared showing the sales for the day and the cumulative total for the month. Through the comparisons revealed in this report, the executives are constantly aware of the progress made toward meeting sales quotas.

The Laclede-Christy Clay Products Company requires each district sales manager to prepare a six months' sales estimate for his territory. Originally, these estimates were expressed in tonnage units for a monthly period, but are now considered on a quarterly basis. These individual district estimates, which at this point are considered only tentative, are consolidated and converted into a tentative production schedule for which definite limits are set for each element of cost.

The tentative estimates are subsequently reviewed and revised by the administrative executive in the light of general company policies and a final consolidated sales budget for the quarter is approved. The final figures thus secured, may vary widely from the tentative figures originally submitted and on which the production budget was based. As a means of adjusting production expenses to these new conditions, a unit cost per ton for each group of expenses is calculated on the basis of the original program. This unit cost is then extended for the quantities as finally approved for production and in this way the revised standards of performance for the period are developed.

The Richard C. Remmey Sons & Company has developed an interesting method of projecting its anticipated income. Originally its operations were planned on a yearly basis. This was changed to a six months' period, later to a monthly period and, at present, production is scheduled on a weekly basis designed to maintain a standard inventory.

Recent economic developments of importance to the fire brick industry in the territory served have made these steps necessary. This company has important customers among the manufacturers of gas, oil, ceramics and electric utilities. Radical changes are in process in these industries that have a decided effect on fire brick consumption. For example, the production of gas is progressing from a policy of regional production locally to one of concentration at a central plant. In the oil industry there has been a change from low pressure to high pressure refining. Ceramic manufacturers are progressing from the periodic to the continuous kiln, and the electric utility companies from the local station to the central power plant. The Remmey Company has experienced considerable difficulty in forecast-

ing accurately the demand for its products under such rapidly changing conditions. To insure adequate service, a standard inventory, including a full line of products, is maintained at all times. Operations are planned only one week in advance, to replenish the stock sold during the previous week. This results in an extremely short budgeting period, but seems necessary where a company is operating within a restricted area and where conditions within the industry are changing rapidly.

Numerous instances were discovered in which brick manufacturers are making no effort to forecast their income through a sales projection. In these cases, budgeting based on standard cost procedure is usually restricted to production for the purpose of controlling manufacturing cost.

BUDGETING PRODUCTION

THE PRIMARY OBJECT of a production schedule is to obtain the maximum efficiency through effective utilization of plant capacity. A level rate of production, even though sales do oscillate during the budget period, has a tendency to reduce the cost of manufacture and to maintain the quality of the product. A production budget is designed to provide gauges of plant utilization, purchase requirements, labor requirements, both direct and indirect, and a projection of overhead expense divided into general classifications according to the extent to which they may be considered partially variable, wholly variable or constant.

The success of a scheduled production budget depends upon the accurate analysis of production operations and the logical assignment of responsibility, so that executives

may be held responsible only for expenses over which they exercise control. This principle is not always strictly followed. There is frequently a tendency to weaken or diminish the confidence of department heads in the entire budgeting procedure where a budget officer undertakes to hold them responsible for expenses which, even though included in their departmental costs, they are in no position to control. It is preferable, therefore, to place responsibility only where authority exists.

A good illustration of the application of budgetary control to production operations is furnished by the Western Brick Company. This company has definitely standardized its producing operations, for each of which it has established a normal unit cost per thousand bricks produced. The seven operations or

departments include the clay pit, grinding, machining, drying, setting, burning, sorting and molding. A standard classification of expenses is employed, so that it is definitely known, for example, what the direct labor cost per thousand bricks should be in the grinding department, what the fuel cost in the burning operation should be on the same basis, etc. Comparisons of actual performance with these standards are made at regular intervals.

One element of cost that has presented a problem, from the standpoint of budgetary control, is the item of rehandling. This item includes the various costs incurred through

the substitution of one lot or style for that already prepared for burning in the kiln. Such action is frequently necessary to meet customers' urgent or special requirements. The Western Brick Company reports a material increase in the amount of rehandling necessary under existing hand-to-mouth buying practices. Moreover, this company has found it almost impossible to forecast the amount of this expense for any one period, depending, as it does, purely on the extent to which the planned production schedule coincides with customers' orders. Through analysis of past experience, however, it has been possible to determine with fair accuracy

KILN NUMBER		PREVIOUS BURN							
Number days burning.		CONDITION OF WARE WHEN SET							
		Total Settle	Tons of Ware	COAL					
				Used _____					
		Should be _____							
		Difference _____							
		THIS BURN							
		CONDITION OF WARE WHEN SET							
LIT UP				OUT		Tons of Ware	Coal for this burn Should be		
Date	Time	Date	Time						
Date	Time	Temperature	Settle	Date	Time	Temperature	Settle	COAL- total Tons	

FORM 1

the average percentage of total production costs represented by rehandling for the period of a year. With this percentage as a basis, a reserve is set up to provide for this item, accumulating a proportionate charge in the current costs of each period against which the fluctuating expenses are charged as incurred.

The Murphysboro Paving Brick Company correlates its production schedules with its sales forecast described previously. Actual monthly performance has approximated the anticipated budget figure within five per cent., and therefore there has been little danger of overproduction or an inventory accumulation. This company budgets the component items of production costs, not in terms of dollars, but in terms of quantity of material and labor consumed.

Fuel is an important item of expense in this industry. From a careful analysis of past records, a schedule of normal fuel consumption under various conditions has been developed. Prior to firing each kiln, the foreman is furnished with a card (Form 1) showing, among other items, the budget of coal consumption. This card, which serves as a budget guide for the foreman, is attached to the kiln and each issue of fuel is entered upon it. The same plan is followed in connection with direct labor. Daily reports (Form 2, page 12) are prepared showing the production of the previous day, the number of employees of each type in each department and the ratio of tons of finished product to the number of men engaged in each operation. Each foreman's record is then summarized for the month and the amount of deviation from the standards is calculated in dollars and cents. Through this method

the company establishes a control over its production costs.

One company has applied budgeting principles only to certain phases of its production operations. This company's business is heavier during the summer months and to secure the benefit of uniform production, it is necessary to manufacture for stock in the winter and to sell from stock in the summer. In accordance with this plan, inventory peaks are normally reached about April 1st and, to insure against an abnormally high stock, a maximum inventory figure is set.

All production costs are figured in terms of per thousand bricks produced, and although not specifically developed on a budget basis, certain standards of achievement have become fixed through past experience and are accepted as goals which the management expects to reach. For example, through past experience, an average ratio of defective bricks to total production is considered a standard. Other standards are similarly developed for the fuel consumption cost, rehandling cost, etc., on the basis of per thousand bricks produced. As the sales statistics are reported daily and compared to the quota, the executives have some indication of how production should be geared to sales for the period. Unit costs are reported monthly and, although not specifically set up and actually compared with the standards, the comparison is made in effect.

The hand-to-mouth buying tendency, as noted by this company, affects the production scheduling, inasmuch as customers now order for immediate use in small quantities and require immediate delivery in specific shades. The introduction of style and design and the development of new shades complicates the problem of scheduling a definite

the beginning of the year on the basis of historical performance modified by anticipated conditions for the ensuing year. The budget consists of a complete detailed classification of expenses for each department. The units of measure employed are "tons" for terra cotta, drain tile, roofing tile and sewer pipe, "thousands" for brick and "square feet" for flat tile.

The company coordinates its sales and production through standard inventories, i.e., from past history the average demand is determined and a standard inventory is set up not to exceed the anticipated sales for the

given period. This control applies to all products with three exceptions on one of which a budget can actually be planned in view of the fact that there is available a reasonably accurate measure of the year's demand. The other two products are manufactured to order only. The budget, checked carefully by department heads, is compared each month with actual expenditures, and discrepancies are investigated. At present the budget serves as a control of expense only. Form 3 is the reproduction of a portion of the sheet used by this company to give effect to

BUDGET 1928												
		Actual 1928	Actual 1927	Budget 1928	Having	Budget	Actual	Budget	Actual	Budget	Actual	Budget
1	Threat - Recent Federal Income											
2	Franchise Fee (1928)											
3	State Corporation Tax (1928)											
4	Ad Valorem Credits											
5	Insurance & Fidelity											
6	Insurance - Recent Commission											
7	General Office											
8	Contractors Liability											
9	Employers Fidelity Bonds											
10	Firearm											
11	Wm. Abbotson											
12	Frederick H. H. H.											
13	Proprietor H. H. H.											
14	Allen H. H.											
15	Atchell H. H. H.											
16	F. B. O. H.											
17	H. H. H.											
18	Stationery & Office Supplies											
19	Telephone and Telegram											
20	General Office Telephone											
21	San Francisco Warehouse											
22	Oakland Warehouse											
23	Lincoln Factory											
24	Consent House											
25	Postal - Western Union - Machinery											

FORM 3

comparisons between the budgeted expense and the results of actual operations.

Mr. H. C. Kley Meyer, of the Standard Brick Company of Evansville, Indiana, who has studied the subject of budgeting as applied to the brick industry, claims that every plant, regardless of product manufactured, can use the budget system to advantage simply by applying it to the plants' specialized problems.

He outlines as the first step in the adoption of a budget system the determination of the cost of every operation in the process of manufacturing and the establishment of the actual labor requirements to operate the plant from the pit to the shipping point, reducing this to dollars and cents per unit of product. This estimate is based on information developed through cost records and past experience.

After the figure representing the desired cost and the budgeted amount has been set up, a check-up is made on the costs for the current week and on the average cost for the year to date. A comparison is made between these figures and the budgeted amount. As an indication of the degree of accuracy attainable through such methods, actual costs were shown to be one cent less than the budgeted amount per thousand bricks produced in one case and two cents greater in another.

According to this company's methods for apportioning cost, the plant is divided into its separate departments. In the pit, for example, the approximate amount of clay to be used for the year and the labor required to bring it to the plant is estimated. The budget for this department includes the cost of stripping, the cost of the operator running the clay winning machinery, and the labor

required to haul the clay and move the track. Whenever extra labor is required in the pit, whether borrowed from some other department of the plant or secured from the outside, it is charged to the cost of pit operations. Every department has its productive and unproductive labor, and the cost of the latter is always charged to the proper department.

The standard labor requirements in the clay preparation machine room, and in the drying and burning departments are definitely known. The expense of necessary extra labor, i.e. the unproductive labor which is used in making repairs, changes, etc., must also be included in the budget and is estimated as accurately as possible.

The labor requirements for drawing the ware from the kilns vary. Products are shipped direct from the kilns or are placed in storage. In the latter case unproductive labor will be required subsequently to handle material from storage to the car.

An important phase of budget control as practised in the plant of the Standard Brick Company is the procedure in connection with the burning operation. A value is placed on the contents of each kiln set, in terms of the average price per thousand when sold. The estimate of this value, based upon past experience, constitutes the minimum expected from the kiln. It includes the percentage of each of six classifications of quality that the kiln should yield: firsts, specials, seconds, common, culls and bats. The price of each class of brick taken from the kiln is calculated and from this figure the total value of the kiln when burned is determined. The amount thus determined constitutes the budget sum to which the burning department must conform.

This method provides for a close check on the superintendent who is directly responsible for the results from each burn. It also provides an incentive to "beat the budget" for, if he is doing his work properly, the actual value of the kiln will be higher than the budget value. If actual value drops below the budget estimate, it often is an indication of inefficient work.

This company uses the Common Brick Manufacturers Association cost accounting sheet for recording its budget. Three columns are maintained opposite each item, showing in units of per thousand brick, the cost of productive and unproductive labor for each department for a period of one week; the average cost for the year to date includ-

ing the present week, and the budget predetermined for the entire year. Increases or decreases in labor cost are at once apparent.

Below the labor cost is the kiln value data, the first column indicating the kind of brick, the second the percentage of each obtained, the third the quantity of each, and the fourth, the price that will be obtained for each. A total of the price column gives the kiln value.

This "kiln value yard stick" is also a guide for the sales department and indicates the amounts of each of the six grades of brick produced for the month and year, which must be sold at the kiln value price or higher in order to produce a profit.

SELLING EXPENSE

SELLING EXPENSE, considered from the standpoint of budgeting, may be divided into three classifications:

- (a) Non-variable (those that do not vary in direct proportion to sales volume) such as administrative salaries, sales office rents, etc.
- (b) Variable, such as salesmen's commission, shipping expense, etc.
- (c) Those that are partially variable and partially non-variable, such as selling salaries, advertising, sales promotion, and branch office expenses.

An analysis of selling expense statistics will present valuable information which can be used as an effective tool of management in directing sales activities. Such expenses may be considered in relation to the geographical location, kinds of product, space occupied, customers served, sales effort expended, net sales and number of orders.

The Western Brick Company budgets each element of sales expense in terms of

dollars and cents, by territories and by months. Definite amounts are assigned for advertising, sales expense, etc., based upon past experience and the anticipated company program, and these estimates are compared with actual expenditures monthly.

The Laclede-Christy Clay Products Company budgets its selling expense for the year and breaks it down into quarterly periods on the basis of a fixed percentage of sales with a maximum limit. These estimates from which the budget is prepared originate with the department heads and are submitted to the management for approval. This procedure is followed with respect to all expense classifications, including advertising, which is then divided into the amounts to be spent for national, trade journal, technical and direct mail advertising.

Another company studied in the course of this survey establishes its sales expense as

normal ratios of sales on the basis of past performance. These percentages are set up as approximate standards and are used generally as guides. At the beginning of the year an appropriation for advertising is definitely approved as a fixed percentage of sales, and this estimate is strictly adhered to.

The Murphysboro Paving Brick Company estimates probable selling expenses for a month on the basis of the preceding month's experience. The sales expenses are divided into three sections—traveling, advertising and promotion. A further detailed classification of the various expense items, both sales and administration, is made and these figures are used as goals of achievement for the coming period. These estimates, based on past experience, are always considered in the light of conditions that are likely to prevail in the period to be budgeted.

Gladding, McBean & Company estimates its selling expenses on the basis of historical performance modified by anticipated condi-

tions for the ensuing period. After this budget is carefully checked by the department heads and compared with actual expenses each month, the variations are investigated. The following classification is used in this budget procedure:

Salaries

Terra Cotta Department
Pipe and Refractory Department
Roof Tile Department
Miscellaneous Department
General Sales

Traveling Expenses

By Departments and Individuals

Automobile Expenses

By Departments and Individuals

Dues and Subscriptions

By Organizations and Publications

Commissions

Advertising

By Name of Publications, etc.

Samples

By Departments

Compensation Insurance

Insurance

Sundry

ADMINISTRATIVE EXPENSE

COST OF ADMINISTRATION is probably the least variable of any one group, and, as a result, presents little difficulty from the standpoint of budgeting. Usually budget allowances for this group are set in terms of the total amount to be expended for each type of expense during the ensuing period.

Gladding, McBean & Company reports the following classification used to record and budget administrative expenses:

Salaries

Executive
Accounting Department
Office Department
Mailing, Messengers, etc.

Credit Department
Stenographic Department
Traffic Department

Traveling and Entertaining

By Individuals

Rent

By Location

Depreciation

By Classification of Property

Dues and Subscriptions

By Organizations and Publications

Donations

By Name

Taxes

By Classifications

Insurance
By Classifications
Stationery and Office Supplies
Telephone and Telegraph
By Location
Losses on Bad Accounts
Postage
Research Department
Renewal and Professional
By Classification as Retainer Fees, Audit, etc.
Compensation Insurance
Directors' Fees and Expenses
Automobile Expense
By Individuals
Sundry

As in the case of other branches of the business, these expenses are projected on a basis of past experience, consideration being given to management policy and anticipated business conditions.

Another company projects its standards for administrative expenses primarily on the

basis of past experience, using a straight arithmetic average for the past four or five years. This figure is adjusted at the beginning of the year to meet such changed conditions as may be expected to occur during the ensuing period and already planned and known by the management. Executive judgment also is inducted into the estimate to set up a standard which can readily be attained under normal conditions.

In a third company studied, administrative expenses were found to be rather constant. As a budget preliminary, these expenses are classified in detail and a standard for the year based primarily on past experience is set. The yearly estimate is then broken down into weekly estimates to correspond with the weekly period used in projecting a production schedule. By converting all departments and activities uniformly to a weekly basis, a complete profit and loss statement can be prepared at such intervals. This is used effectively by the executives in planning the budget for the following week.

FINANCIAL BUDGET

A PRACTICAL APPLICATION of the budget can be made in connection with a company's financial program and cash requirements. This phase of budgeting is concerned only with cash receipts and disbursements as distinct from income and expenditures, and is designed to anticipate the cash position of the business at all times. The primary objective is to interpret the planned operations of the business in terms of cash requirements so that disbursements may be kept within the limits of available cash. For this purpose the same sources of information are used as for other phases of the budget, but it is neces-

sary to interpret the information in a somewhat different manner. Thus, from the standpoint of production, a forecast of purchases is essential as a means of insuring at all times an adequate supply of materials at a predetermined cost. From the standpoint of the cash budget, however, an analysis of planned purchases indicates for each period the maturing liabilities for the payment of which cash must be provided.

On this basis, the financial budget involves consideration of the terms of sale and the amount and rates of collection of accounts receivable to establish the cash receipts.

Similarly, on the disbursement side, it involves a consideration of payroll requirements, the amount and terms of purchases, and the payment schedule employed with respect to accounts payable.

Consideration must also be given to short-term indebtedness, i.e., the financial assistance secured from commercial banks, trade acceptances and notes given to vendors; and to long-term obligations incurred for financing capital expenditures or to increase production facilities for handling the desired volume of sales. Other factors include any necessary provision for reduction of long-term indebtedness, and dividend requirements, and the cash position which the company wishes to maintain.

The Murphysboro Paving Brick Company provides a practical illustration of the use of a financial budget. In this company, the cash position is anticipated for one month in advance. This projection is based largely on an analysis of conditions existing at the close of the preceding month. At this time, cash receipts are estimated by listing the outstanding accounts receivable and by estimating the proportion to be collected during the current month on the basis of past experience. A similar analysis is made of open accounts payable to determine the obligations maturing during the period.

This part of the budget is developed in considerable detail. For this purpose, *Form 4*, reproduced as an appendix to this report, is employed. It represents, both in detail and in summary, all obligations for which payment must be made during the month. The items are classified according to the type of expense incurred in each phase of the business. Thus, under the disbursements of the Sales Department are listed "Traveling," "Adver-

tising" and "Promotion." Disbursement items under Production include "Payroll," "Freight," "Supplies," "Coal," "Power," "Insurance" and "Miscellaneous" items. Administrative and Finance items comprise individual officers' drawing accounts, "Notes," "Salaries," "Interest," "Assets," "Insurance," "Trade Acceptances," etc.

In the body of the form there is a column for each of the above items. The first section provides for the entry of the actual disbursements made during the preceding month for each item of expense. Under this is listed the estimated total requirements for the current month. The recapitulation at the top of the form provides for the assembling of the data as to cash requirements for the five principal items of expense specified. Mr. C. D. Crossman, Secretary and Treasurer of the company, presents the following description of the manner in which this information is developed:

We list under the first two columns at the left the withdrawals expected to be made by officials of the company. In the next column we list the total of the notes as detailed in the upper section of this budget sheet. This also is done with the payrolls. Traveling expenses are anticipated by what traveling is expected to be done during the current month and what has been spent in months previous. Freight is an item covered by in-bound shipments of coal; as coal is about 30 per cent. of our cost, this freight item is a very important item and we determine it by reckoning the number of tons of coal that we expect to use and multiplying this by the freight rate, which is a consistent figure, as our coal supplies come from local mines carrying the same freight rate. Supplies is an item that consists of about 10 per cent. of our cost and is handled through our storeroom; this amount is determined by past experiences, which has been found to be rather consistent with the number of tons of product made.

The next item is headed "Salaries"; this covers the foremen, superintendents and office force. "Coal" is the amount of coal used for burning brick, as well as for heating purposes and for steam used in the different departments. "Power" is electric power that is determined by bills presented by the local electric light company who furnish power for the running of all of our departments. It is a very easy figure to control. "Interest" covers interest on all Trade Acceptances and Notes. "Assets" have been explained in one of the previous paragraphs. "Insurance" covers all insurance on which we keep a detailed monthly control in carrying our costs at the actual cost per month—covering public and employee's liability, fire and tornado, fly-wheel and boiler, automobile, electric and life insurance. "Trade Acceptances," as explained in above paragraph, are acceptances that we give for machinery or other large items that we buy and which are furnished to us on time payments—for which we sometimes give Trade Acceptances. The "Miscellaneous" section of this budget is divided into seven columns, with three vacant columns for any necessary expansion. The first of these is "Employees," which covers advances made

them on payroll. Next to this is "General Expense," which covers a number of small items not chargeable to any other item. "Office" expense covers all items except salaries. "Telephone and Telegraph" covers bills properly chargeable to this account. "Advertising" covers newspaper and magazine advertising, samples of our products sent out, literature sent out, and any other items that would promote and effect the sales of our products. "Promotion" covers items similar to advertising and are strictly sales items. "Miscellaneous" items are those charged to various accounts that would not be considered as a general expense item.

The term "Assets" appearing above is used to designate the maturing obligations for equipment, etc., purchased on open account as compared to that for which trade acceptances have been issued.

Daily postings are made to this budget from the disbursement records, and the experience of this company for two years shows that actual disbursement figures have averaged within five per cent. of the projected estimates for each month.

INSTALLATION AND ENFORCEMENT

THE ACCUMULATED experience as developed in the course of this and similar investigations indicates that a budget system is no stronger than its enforcement. Irrespective of how carefully or how scientifically budget standards may be developed, they are apparently of little value unless some means are provided for measuring accomplishments against allowances and for encouraging the active cooperation of the organization in the budget program. This survey has indicated that those companies have had the greatest success that have built their budget from within their organizations and have developed it on a cooperative and participating basis.

The arbitrary imposition of standards on department heads without their cooperation and consent has frequently tended to build up antagonism and resistance to the idea of a budget. On the other hand, where the various operating executives and sub-executives have had an opportunity to participate and advise in the setting of such standards, there has been an inclination to consider the results as definitely attainable and to encourage greater effort in achieving these results.

The Harbison-Walker Refractories Company furnishes a good example of the successful application of this principle. In the course of preparing estimates, the executives

of this company hold several conferences with the heads of their various operating units in an effort to inject into the budget plan as much specialized knowledge as possible and to secure generally attainable budget standards. The enforcement of the budget is directly in the hands of the various works managers. The budget officer is the Secretary of the company.

In the case of the Western Brick Company, operations are conducted on a basis of thirteen periods of four weeks each. Total and unit costs for all departments are computed for each period, and every foreman having received his departmental report knows definitely the standards he is expected to maintain. A real incentive for improved performance is offered in the form of a bonus based on the savings effected in each department. The fact that the foremen have a definite voice in the preparation of the standards set has contributed materially toward making this company's bonus system effective.

In a large organization, where responsibility must be widely delegated, there is the greater necessity for the executives to consider some plan that will inject the viewpoints and opinions of the individual department heads into the budget. Their enthusiastic cooperation is also valuable in investigating the causes of discrepancies between actual performance and standard and in suggesting such revisions from time to time as may be deemed necessary in the light of changing economic conditions.

The budget program of the Laclede-Christy Clay Products Company is administered by the Secretary-Treasurer of the company. The foremen are furnished peri-

odically with a detailed performance record showing the variations from the budget estimates. In this organization budget allowances are based directly on estimates originating with the individual foremen and department heads. The performance record is prepared in considerable detail to permit the careful analysis and investigation of important discrepancies or deviations from standards. These investigations and satisfactory explanations are always required for the purpose of preventing recurring deficiencies.

Such thorough analysis and investigation may indicate the necessity for revising the budget estimates for the balance of the budget period. Changes in economic conditions, in operating methods or in company policy may render the original estimates obsolete. The fact that standards have not been attained is not sufficient cause to change the standards as long as conditions under which the original estimates were made remain normal. The practice of changing budget estimates because actual performance does not approximate the predetermined standard usually negates the value of budgetary control. No change of importance should be considered in the department program without considering its effect on the master plan and the budget of the other units. On the contrary, a budget plan is a coordinated and predetermined operating plan for each function of the business developed through the cooperation of department heads and executives. It facilitates executive control, inasmuch as the estimates are deemed to be attainable under normal conditions, provides factual information and guides the executives in planning the company policies for the future.

ACKNOWLEDGMENT

The cooperation of the following companies and individuals in the preparation of this report is hereby gratefully acknowledged:

E. B. ROGERS, *Secretary-Treasurer*,
Alton Brick Company,
Cleveland, Ohio

J. C. ROBINSON, *Treasurer*,
Clay Products Corporation,
Hampton, Va.

L. M. MUMFORD, *General Manager*,
Danville Brick Company,
Danville, Ill.

A. V. CHRISTIANSON,
Gladding, McBean & Co.,
San Francisco, Calif.

P. R. HILLEMANN, *Secretary*,
Harbison-Walker Refractories Co.,
Pittsburgh, Pa.

W. J. WESTPHALEN,
Laclede-Christy Clay Products Co.,
St. Louis, Mo.

H. B. KEELER, *Secretary-Treasurer*,
Mason City Brick & Tile Co.,
Mason City, Iowa

SPENCER M. DUTY, *President*,
The Medal Brick & Tile Co.,
Cleveland, Ohio

C. D. CROSSMAN, *Secretary-Treasurer*,
Murphysboro Paving Brick Co.,
Murphysboro, Ill.

RICHARD C. REMMEY, *President*,
Richard C. Remmey Sons & Co.,
Philadelphia, Pa.

GEORGE A. BALZ, *President*,
Seaboard Refractories Co.,
Perth Amboy, N. J.

H. C. KLEYMEYER, *President*,
Standard Brick Manufacturing Company,
Evansville, Ind.

W. E. DUNWODY, *President*,
Standard Brick & Tile Co.,
Macon, Ga.

E. F. PLUMB, *President*,
Streator Brick Company,
Streator, Ill.

F. W. BUTTERWORTH, *General Manager*,
Western Brick Company,
Danville, Ill.

R. D. T. HOLLOWELL, *Secretary-Treasurer*,
American Face Brick Association,
Chicago, Ill.

GEORGE C. D. LEUTH, *Secretary*,
Clay Products Association,
Chicago, Ill.

RALPH P. STODDARD, *Secretary-Manager*,
Common Brick Manufacturers Ass'n,
Cleveland, Ohio

E. L. BELLER, *Secretary*,
National Paving Brick Association,
Chicago, Ill.

HERBERT V. KAEPPEL, *Managing Editor*,
Brick and Clay Record,
Chicago, Ill.

OTHER AVAILABLE PUBLICATIONS OF THE POLICYHOLDERS SERVICE BUREAU

The following reports discussing topics of interest to executives in the brick and clay industry are available on request:

The Significance of the Budget

The Sales Budget

Establishing Sales Quotas

Cooperative Marketing Activities in Business

The Value of Style and Design in Selling Ceramics

The Use of Style and Design in Industry

Sources of Cost Information

Tendencies in Sales Organizations

Present-Day Merchandising

Methods of Compensating Salesmen

The Province of Sales Management

Analysis of Branch Managers Contracts

*The Use of Research in Developing Old Products and
Introducing New Ones*

Methods of Compensating Production Executives

Reducing Losses from Obsolete Material

Sharing Profits with Employees

Radio as an Advertising Medium

The Foreman's Part in Safety

Artificial Respiration

Through its diverse contacts with various types of industry, this Bureau has access to business information which it can, in turn, pass on to interested business executives. A staff of specialists is maintained for the purpose of making available to Metropolitan Group insurance policyholders a consultation service with respect to individual problems.

This Bureau is glad to correspond with Group insurance policyholders and others interested in the subject matter of this report.

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BUDGET FOR _____ 19____

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The Budgetary Control Procedure
Of A Cotton Mill

B - 138



POLICYHOLDERS SERVICE BUREAU
METROPOLITAN LIFE
INSURANCE COMPANY
HOME OFFICE . NEW YORK
Pacific Coast Head Office, San Francisco
British Isles Head Office . . . London
Canadian Head Office Ottawa

METROPOLITAN LIFE INSURANCE COMPANY PRESS
NEW YORK, U.S.A.
10725

THE BUDGETARY CONTROL PROCEDURE OF A COTTON MILL

NOTE This report was prepared to answer specific questions presented by a Group insurance policyholder of the Metropolitan. It was compiled with special reference to the situation confronting the organization for which the service was rendered, and is not intended as an all-inclusive discussion of the subject. The report has been made available for general distribution because it is believed that the contents may be of interest to executives confronted with similar problems. In the form here presented, references or material of exclusive interest to the company for which it was prepared, have been removed.

The report aims to present factually the methods and practices of business men in meeting the particular problem considered. Opinions cited are those of the contributors, and their use in the report does not indicate any endorsement on the part of the Metropolitan Life Insurance Company.

Prepared by
Policyholders Service Bureau
Metropolitan Life Insurance Company
New York City
1932

THE BUDGETARY CONTROL PROCEDURE

OF A

COTTON MILL

The procedure described in this report is based on the budgetary control practices used at the Lynchburg, Virginia, plant of the Consolidated Textile Corporation. The system is essentially one of standard costs wherein a predetermined unit cost, or standard, is developed for each type of fabric manufactured as well as for each item of mill cost. These standards represent what each individual item of cost should be for the period under consideration, and under the business and operating conditions anticipated.

Description of Budget Procedure

The first step in preparing the operating budget is to lay out the looms in the mill on the various constructions, or types of fabrics, as designated by the selling organization. A master sheet - the Budget Control Form (copy appended to this report) - is used to assemble budget information and comparative records. Each construction, together with the number of looms to be devoted to its manufacture, is entered on the Budget Control Form in the columns headed "Constructions" and "Looms On". The weekly production of one loom is also determined for each construction at 100% efficiency and at the attained efficiency as arrived at by reference to production records over a reasonable period of time. On the budget control form, a week is taken as 55 productive hours. If the demand is such that the 55 hour week is not sufficient to meet requirements, a longer week is used in determining the pro-

duction per loom.

After the weekly production for one loom has been determined for each construction to be manufactured, it is multiplied by the total number of looms to be used for that construction to obtain the total weekly production expressed in pounds. The production for each fabric is further determined for a year, for one week, for four weeks and for five weeks. These production figures are entered on the form in the four columns under the heading "Pounds". The total production figures of all construction is also determined for periods of one year, one week, four weeks and five weeks, and entered on the Budget Control Form in the proper sub-columns under the heading "Estimated Budget".

The next step is to work out a labor payroll applicable to the estimated total production of all fabrics, based on incentive rates and labor cost records of past periods. In like manner, by reference to previous cost records the amount of expense for starch, size, electric power, oils, etc., is worked out covering the estimated total production. These estimated budget costs are developed for periods of one year, one week, four weeks, and five weeks, and are entered in the four sub-columns under "Estimated Budget". The costs are totalled for each of the four periods to obtain the Total Mill Cost, to which is added depreciation, overhead and interest to obtain the Total Operating Cost.

Each estimated item of expense is then divided by the total estimated production and a standard average cost per pound is arrived at. These are totalled to obtain the standard average total mill cost per pound and a

standard average total operating cost per pound of production. These figures are entered in the column headed "Standard Average Cost". At the same time, the percentage of each item of expense to the total operating cost is calculated and entered in the first column on the left hand side of the Budget Control Form.

After the expenses covering the total estimated production have been arrived at in the above manner, the next step consists of estimating a standard individual fabric cost for each type of construction. This is accomplished by distributing each and every item of expense to the various departments in the mill, and calculating unit departmental costs. These unit departmental costs are summarized and standard individual fabric costs are calculated. These standard costs are entered on the form in the column headed "Standard Individual Fabric Cost". When the standard individual fabric costs are multiplied by the estimated weekly production of each fabric, the average cost obtained should correspond to the Standard Average Operating Cost described in the preceding paragraph.

At the beginning of each year, therefore, the Consolidated Textile Corporation has assembled on its budget control form a cost estimated for each item of operating and mill cost expressed in dollars, an estimated volume of production to be obtained for each individual fabric and for all fabrics, a standard average cost for each item of mill and operating cost expressed in cents per pound of production, and a standard individual cost per pound for each type of fabric manufactured. The cost estimates and standards are prepared for four and five week periods to facilitate comparison of actual to

budgeted costs. Actual costs are assembled monthly, each month consisting of either four or five weeks.

It should be emphasized that the cost estimates and standard costs are subject to revision should conditions warrant. Any marked change in loom layout due to curtailment of production on certain fabrics and increased production in others, or any change in the hours of operation per week or the number of looms operated, will require revision of the budget estimates and the standard costs.

Control Procedure

Budgetary control is exercised through comparisons of actual expense and actual unit costs with estimated expense and standard unit costs. At the end of each month, the actual costs for each item of expense, together with the pro-rated expense of those items which are on an annual basis, such as depreciation, taxes, insurance, etc., are accumulated and entered on the control form. If the month has consisted of four weeks, these cost figures are compared with the estimated four week costs; if the month consisted of five weeks, the five week estimate is used.

In addition, the actual cost for each item of expense is divided by the production of the month, in pounds, to obtain the unit cost per item of expense expressed in cents per pound. This cost is compared directly with the standard cost developed for that item of expense. The individual actual unit costs for the month are also totalled and compared with the total standard unit cost, and a percentage figure is derived giving the per cent increase or decrease of the actual cost per pound over the standard cost per

pound.

The comparison obtained through this procedure are as follows:

Total standard operating cost to total actual operating cost.
Total standard cost per pound to total actual cost per pound.
Estimated cost to actual cost for each item of expense.
Standard unit cost to actual unit cost for each item of expense.
Per cent increase or decrease of actual over standard costs.

Variations in unit and total costs from the standards or estimates are immediately investigated to determine the causes of the variations. If the variations are controllable, steps are taken to make sure that the costs will conform to the standards in the future. If the investigation shows that the standards and estimates were incorrectly made, or that the present standards cannot be maintained because of changes in conditions, new standards will be developed to conform to the present conditions.

The actual production for each type of fabric, expressed in pounds, is also recorded on the control form. As long as the looms are laid out on the same fabrics or approximately the same fabrics as used in preparing the operating budget, the standard individual fabric costs can be adjusted to the actual cost for any month on a percentage basis. This is accomplished by multiplying the standard individual fabric cost by the percentage increase or decrease of the actual average operating cost over the standard average cost. Should the loom layout vary from the budget, it will be necessary to multiply the standard individual fabric costs by the actual production on each fabric to arrive at a new standard average cost.

At the end of each quarter, the costs and production for the previous three months are assembled and the actual unit cost for each item of expense, for all expenses, and for each type of fabric manufactured, are

computed and compared to the standard unit costs which have been developed for each item of expense, for the total of all expenses, and for each fabric. The quarterly comparison is used in addition to the monthly comparisons, since it tends to average out many minor fluctuations which appear in the monthly figures.

Space is provided on the control form for entering pertinent production data which will assist in analyzing the budget report and in controlling operations. This data includes, for each month, the number of looms, spindles, and cards operated; the average daily employment; the average hourly, daily, or weekly wage; the production for the month in pounds and yards; the number of hours run; the average yarn number; and the average efficiency of all looms.

Comparison of these figures from month to month will aid in controlling costs, as well as determining the causes of some of the cost fluctuations from standard.

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BUDGET CONTROL FORM

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Other Metropolitan publications which may be of
interest to readers of this report are:

ACCIDENT PREVENTION SURVEY OF A TEXTILE PLANT
BONUS AND THE BUDGET
BUDGETING MANUFACTURING OPERATIONS
FORECASTING SALES IN CONNECTION WITH A BUDGET
PROCEDURE
A MANUAL OF BUDGET PROCEDURE
THE MANUFACTURING EXPENSE BUDGET
OPERATION STUDY
SOURCES OF COST INFORMATION
WAGE PAYMENT PLANS IN THE MANUFACTURE OF
TEXTILES

Copies may be obtained on request from Policyholders Service
Bureau, Metropolitan Life Insurance Company, One Madison
Avenue, New York City.

AN ECONOMIC SERVICE TO BUSINESS

This is one of numerous publications issued by the Policyholders Service Bureau in the interest of better management in business. The Metropolitan has good reason for desiring to contribute, so far as practicable, to improved practices in management. Effective management is a vital factor in the continuous and profitable operation of business enterprises and helps to bring about steady work and regular income for Metropolitan policyholders, who number more than one out of five of the general population. An even greater proportion than one-fifth of the employees in commerce and industry are insured by the Metropolitan Life Insurance Company. The relationship between prosperous policyholders and the company's progress is obvious.

Because of its great stake in the nation's economic life, the company has set up the Policyholders Service Bureau to carry out a program of economic service to business. The Bureau staff is made up of specialists in the various fields of management -- in business organization, office management, accounting and finance; in marketing, distribution, advertising and sales management; in production and personnel management; in business and economic research; in industrial health and accident prevention.

Investigations of subjects of current interest to business executives are continually being carried on by the Bureau's specialists in these various fields of management. Reports of such of these investigations as are of general interest are published from time to time. For additional information about the work of the Bureau or its published reports, address:

Policyholders Service Bureau
Metropolitan Life Insurance Company
One Madison Avenue
New York City

Budget for the Department Store

B - 191



POLICYHOLDERS SERVICE BUREAU
METROPOLITAN LIFE
INSURANCE COMPANY
HOME OFFICE . NEW YORK
Pacific Coast Head Office, San Francisco
British Isles Head Office . . . London
Canadian Head Office Ottawa



BUDGET FOR THE DEPARTMENT STORE

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Prepared by
Policyholders Service Bureau
Metropolitan Life Insurance Company
New York City
1929
Reprinted 1933

BUDGET FOR THE DEPARTMENT STORE

There are four steps in the operation of any budget. These may be given as follows:

1. The classification and assembly of reasonably accurate data covering past performance, to be used as a basis for estimating future performance.
2. The preparation of budget estimates covering the forthcoming budget period.
3. The periodic comparison of actual performance with this planned or budgeted performance.
4. The adjustment of conditions within the business along the lines indicated by this comparison.

The classification and distribution of expenses is very closely related to the subject of budgeting and is a matter of vital importance in the control and management of any retail store. The Controller's Congress of the National Retail Dry Goods Association has drawn up a standardized expense classification which has proved very successful in operation. Department store managers and executives who are contemplating the installation of a budget plan will find that any time spent in a careful study of the proper method of classifying expenses and the adoption of a budget plan which will be closely co-ordinated with the accounting work will prove most valuable.

In installing a budget plan some department stores have found it practical to present each department head with a form showing the actual expenses of his department for the previous period. With the records of the

past as a basis, the department head is in a position to estimate the expenses for the coming period as well as the sales, in the case of the selling departments. When these preliminary estimates are completed they may be forwarded to a budget committee for consideration and final action.

The two budget systems which are reproduced below are descriptive of budget plans in actual use in successful retail stores. The methods used by each of these stores are different in a number of respects. Each plan, however, has its merits and each has been found to be of very considerable practical value to the store in question.

ABRAHAM AND STRAUS BUDGET PLAN

The first step in the operation of the budget plan is the establishment of a six months' merchandise budget (Form I). Prior to the beginning of the fall and spring seasons, the statistical department of the store furnishes to each of the seven divisional merchandise managers, by means of this form, a record of last year's sales, retail stock, turnovers, retail transfers, cash discounts, purchases, mark-ups and reductions, etc. Each divisional merchandise manager discusses with his buyers their plans for the coming six months. When the preliminary six months merchandise budget has been approved by each divisional merchandise manager, the forms are given first to the general merchandise manager and then to the budget committee, made up of the principal store executives, for study. When the plans have been finally approved, the figures therein become the budget for the period.

Comparison of Actual With Estimated Performance

The statistical department prepares a weekly statement of the results of each department's operation. Two copies of each of these statements are furnished to each of the divisional merchandise managers. It will be noted that this statement (Form 2) gives each of the divisional merchandise managers, and through them each of the department buyers, a complete picture of sales, stocks, purchase orders placed, purchase orders outstanding, purchase orders received, etc. By using nearest hundred and by so arranging the work that a considerable amount of the information may be filled in in advance, the statistical department is able to have this statement in the hands of the divisional merchandise managers at three o'clock on Monday afternoon, complete as of the close of business of the previous Saturday night. The purchases used in arriving at this weekly stock figure are secured by analyzing by departments the invoices as passed to the receiving room for checking. To obtain the retail, the maintained mark-up rate is applied to the cost secured as above.

At the end of each month actual figures are tabulated on the six months' merchandise budget forms in parallel columns with the budgeted figures.

Changes in Open-to-Buy Figures

Once a week each divisional merchandise manager sends to the statistical department an Approved O. B. Report (Form 3) on which are listed all changes in purchase limits or open-to-buy figures. In other words, if the original budget shows an open-to-buy figure for the balance of the month

Form 2

310

APPROVED O.B. REPORT

WEEK ENDING Form 3

SIGNATURE _____

SEND ORIGINAL TO STATISTICS—DUPLICATE TO M. O.

of \$5,000 and the divisional merchandise manager feels that an additional appropriation for merchandise purchases is justified because of an increase in anticipated sales or for any other reason, this change is noted on the Approved O. B. Report. The amount allotted to the buyers each week is for the orders to be placed that week, to come in during the period for which it is allotted. Any unused balance is automatically cancelled at the end of the week. This system is based on the principle that what happened is reflected in the stock or outstanding orders.

Essential Features of the General Plan

From the description of the operation of the budget plan, insofar as it relates to the merchandise budget, given in previous paragraphs, it is apparent that the Abraham and Straus method of operation differs materially in at least one respect from that used by many stores. The fundamental thought in the operation of this plan is that the statistical and accounting departments shall do nothing automatically. The store executives in this organization view the accounting and statistical departments primarily as service departments, having as their chief function the compiling and giving of information to the merchandise managers and store executives.

It sometimes happens that in a particular division the open-to-buy limit may already have been exceeded on the fifteenth of the month. Nevertheless, if the divisional merchandise manager in charge of this particular group of departments puts through an Approved O. B. Report showing a still further increase of open-to-buy limits, the accounting and statistical departments simply record this fact and do not question the propriety of the

action. The thought is that the divisional merchandise manager knows from his copy of the budget and his copy of the weekly report, already shown as Form 2, that he has over bought, and that, therefore, presumably he is authorizing further purchases because of good reasons with which he, rather than the accounting or the statistical department, is familiar. It is, of course, to be understood that the store executives, including the general merchandise manager, the treasurer and others, receive copies of each of these reports and if these officials feel that the judgment of the divisional merchandise manager is open to question, it is entirely within their province to take the matter up with him.

Expense Budget

On the twelfth of each month, each non-selling department head submits to his Division Chief a budget report of estimated expenses for his department for the following month (Form 4). This form contains captions for all items of expense no matter what their nature, so that it is not anticipated that every department will necessarily have a figure to fill in for every item of expense shown on the form. The experience of the store has indicated that the chief value of this report is that each department head is forced to sit down and decide how many employees he will need in his department for the following month. In this way, it has been found that the department head will think twice before including in his budget salaries for additional employees or other added expense, because he knows that he will be called upon to justify these increases to his superiors.

- 5A -

Form 4

Budget Report

To be delivered to Division Chief not later than the 15th of each month
From _____ Dept. _____ For month of _____ 192

	NUMBER OF PERSONS	AVERAGE PER WEEK	TOTAL WEEKLY PAY	MONTH'S TOTAL
Regular Employees				
Contingent Employees				
Overtime				
Bonus				
TOTAL				

Advertising (help).....
Fixture Maintenance (Repairs to Equipment).....
Supplies

Stationery.....\$ _____
Printed Forms..... _____
Bags..... _____
Boxes..... _____
Paper..... _____
Twine, etc..... _____

TOTAL.....

Transportation (freight, express, carfare).....
Postage.....
General Expense (items not otherwise classified).....
Professional Services (legal, Accounting, Appraisal).....
Telephone.....
Suppers.....

Special items for departments indicated below to be
itemized on back of this report.

Dept. C. B. Donations	Show total here.....
Dept. C. O. Alterations & Repairs	" " "
Dept. C. R. Automobile Maintenance	" " "
Dept. C. G. Heat, Light & Power	" " "
Dept. C. B. Personnel Activities	" " "
Dept. D. B. Store Decorations	" " "
.....	TOTAL.....

Department Manager should fill out each item
shown above. If no expense, for any item,
write "NONE".

Signed.....
Dept. Mgr.

Allocation of Expenses

These individual budget reports are summarized on a monthly expense budget sheet (Form 5). There are separate sheets for each of the four divisions of merchandise, control, administration and publicity. A separate budget sheet is not made for each merchandise or selling department. These are budgeted in total. It will be noticed that provision is made on this form for listing, in parallel columns, actual and budget expenses. Here again, however, the practice of this store is somewhat different from that of others. Instead of attempting to arrive at a total amount of direct and indirect expense for each department and then adding the expense of the non-selling departments to the selling departments, as is frequently done, the estimating process stops when the expenses of each department have been budgeted. By following this procedure the store executives feel that they are able to eliminate a good deal of clerical detail in the accounting work.

BUDGET PLAN OF A WELL-KNOWN SPECIALTY STORE

A somewhat different method of budgeting which has also been used for a number of years is used by a well-known Fifth Avenue store. The essential features of its plan are:

1. A plan of experience sheet
2. A sales, expense, and service result statement
3. A stock and net result statement
4. A request for revision of planned figures

The year is divided into two seasons of six months each. At the beginning of each season each department buyer prepares his budget on a plan and experience sheet, Form 6, front. The figures for the previous

[illegible]

Form 6
(Front)

PLEASE COME TO YOUR MOSE. OFFICE
AT _____ O'CLOCK THE _____ OF EACH
MONTH TO DISCUSS THESE FIGURES

PLAN AND EXPERIENCE SHEET

THIS CARD MUST BE SENT TO THE
TREASURER'S OFFICE ON THE FIRST
OF EACH MONTH

DEPT. _____ CONTAINING _____

SPRING SEASON 192 _____	SALES			PURCHASES AND PURCHASE LIMITS				STOCK			
	LAST YEAR	PLANNED THIS YEAR	ACTUAL THIS YEAR	LAST YEAR	ACTUAL THIS YEAR	LIMITS THIS YEAR	OVER OR UNDER LIMIT	PLANNED THIS YEAR	LAST YEAR	PLANNED THIS YEAR	ACTUAL THIS YEAR
JANUARY											
FEBRUARY											
MARCH											
APRIL											
MAY											
JUNE											
TOTAL											

MONTH	ADVERTISING			GROSS PROFIT		
	LAST YEAR	PLANNED THIS YEAR	ACTUAL THIS YEAR	LAST YEAR	PLANNED THIS YEAR	ACTUAL THIS YEAR
JANUARY						
FEBRUARY						
MARCH						
APRIL						
MAY						
JUNE						
TOTAL						

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year's activities are furnished him by the statistical division. These individual buyers' budgets are then submitted to the divisional merchandise manager. After adjustments are made the departmental plan and experience sheets are in turn submitted to the merchandise manager and the treasurer for final approval.

During the budget period a running record of outstanding orders and open-to-buy is kept on the reverse side of Form 6, as shown. It will be noted that provision is made on Form 6 for showing the departmental gross profit.

Monthly Summary Statements

At the end of each month the accounting and statistical departments prepare two forms on which are summarized the results for the month, and on which the actual figures are compared with the estimates. Form 7 is a summary of sales, expense and service results. This is prepared by each department and is used to give information to the store manager and his assistants in regard to service expense in contrast with total sales and profits. Form 8, Stock and Net Result Statements, is drawn up along lines similar to Form 7, but in this case the information is prepared from the standpoint of merchandise and merchandise control.

If in a department either a buyer or a service manager needs to revise his planned figures during the budget period, the request for such revision must be made on Form 9. No buyer or service department manager is permitted to change his planned figures without first having the change approved by his superior on Form 9.

Approved by his superior on Form 9.

permitted to change his planned figures without first having the reasons for revision made known to him. He must also submit a written statement of the reasons for the revision and the revised figures to the Merchandise Manager and the Treasurer, and finally approved in writing.

It is a department which is kept in a service manager mode in review his planned figures during the budget period, the request for revision must be made on Form 9. He must also submit a written statement of the reasons for the revision and the revised figures to the Merchandise Manager and the Treasurer, and finally approved in writing.

standpoint of merchandise and warehouse control.

valued to Form 9. For the same reason the information is prepared from the Profit and Loss Statement and the Budget Statement, is given up along with the statement in regard to service expenses in contact with total sales and department and is used to give information to the store manager and his company of sales, expenses and service results. This is prepared by which the actual figures are compared with the estimates. Form 9 is a prepare two forms on which are summarized the reasons for the error, and on the end of each month the accounting and warehouse departments.

Monthly Summary Statement

noted that provision is made on Form 6 for showing the departmental gross and open-to-buy in fact on the reverse side of Form 6, as shown. It will be During the budget period a running record of outstanding orders for final approval.

shows are in fact submitted to the merchandise manager and the Treasurer. After adjustments are made the departmental plan and estimates individual buyers' budgets are then submitted to the divisional merchandise manager's activities are furnished him by the statistical division. These

The information on this card is provided because independent effort should proceed from a buyer. The Planned Results of the existing season must be carefully prepared by the Department Buyer, Merchandise Manager and the Treasurer, and finally approved in writing. As the company's business will be carried on for the next season, the buyer must not be succeeded without previous authority for good and sufficient reasons. The departmental plan and estimates must be submitted to the Merchandise Manager and the Treasurer, and finally approved in writing. It is the policy of the company that the departmental plan and estimates must be submitted to the Merchandise Manager and the Treasurer, and finally approved in writing. It is the policy of the company that the departmental plan and estimates must be submitted to the Merchandise Manager and the Treasurer, and finally approved in writing.

Form 6 (Back)

SPRING SEASON 192

M O N T H		DECEMBER 31st	JANUARY 31st	FEBRUARY 28th	MARCH 31st	APRIL 30th	MAY 31st	JUNE 30th
JANUARY	FOREIGN							
	TOTAL							
FEBRUARY	FOREIGN							
	TOTAL							
MARCH	FOREIGN							
	TOTAL							
APRIL	FOREIGN							
	TOTAL							
MAY	FOREIGN							
	TOTAL							
JUNE	FOREIGN							
	TOTAL							
TOTAL OUTSTANDING COMMITMENTS								
AMOUNT OF LIMITS BALANCE OF SEASON								
OPEN TO BUY BALANCE OF SEASON								
ORDERS OUTSTANDING FOR NEXT SEASON								
AVERAGE GROSS PROFIT PERCENTAGE (MARK ON) SHOWN ON INVENTORY AND PURCHASES AT RETAIL SEASON TO DATE								
ACTUAL THIS YEAR								
AVERAGE GROSS PROFIT PERCENTAGE (MARK ON) SHOWN ON MONTHLY PURCHASES AT RETAIL								
ACTUAL THIS YEAR								
APPROVED								
TREASURER								
APPROVED								
MERCHANDISE MANAGER								
APPROVED								
BUYER								
APPROVED								
4351' MOSE BGS								

MONTH OF _____ SEASON TO DATE _____

[illegible]

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THIS COPY FOR

REQUEST FOR REVISION OF PLANNED FIGURES

FOR DEPT. _____ DIV. _____

MR. _____ DATE: _____ 1952

I HEREBY REQUEST REVISION OF THE PLANNED FIGURES FOR THIS DEPARTMENT AS FOLLOWS:

[illegible]

(USE OTHER SIDE FOR FURTHER REMARKS)

APPROVED

TREASURES

SIGNATURE

APPROVED

1988. MANAGER OF SERVICE MANAGER

APPROVED

BUYER OR HEAD OF DEPT.

ASSY. NOSE. MNR. OS SUPT.

CONCLUSIONS

A careful comparison of the two budget plans described in this report reveals the fact that two quite different methods of procedure are used. In the first case, for example, approximate rather than actual figures are used and expenses are not pro-rated to the various departments. In the second case actual figures are compiled and every effort is made to determine as accurately as possible the exact expense of operation for selling as well as for non-selling departments in the store. The first plan is that of a large department store; the second is that of what is essentially a group of specialty shops. Each plan has its merits and uses. Both plans are based on the fundamental principle of any budget system, namely, that foresight is better than hindsight, and that any work, expense and trouble which is necessary in order to secure estimates of future activities are more than offset by the results obtained.

Other Metropolitan publications which may be of interest to readers of this report include the following:

ACCOUNTS PAYABLE LEDGER VS. THE VOUCHER SYSTEM
FOR RETAILERS
COLLECTION LETTERS USED BY RETAILERS
COMPENSATION PLANS FOR RETAIL STORE PERSONNEL
COST OF OPERATING A PRIVATE BUSINESS GARAGE
FINANCIAL STATEMENTS IN ANNUAL REPORTS TO STOCK-
HOLDERS OF INDUSTRIAL AND MERCANTILE COMPANIES
THE FINANCING OF DEPARTMENT STORE INSTALMENT SALES
HOW 48 STORE OWNERS MAKE FRIENDS
METHODS OF TAKING PHYSICAL INVENTORY IN DEPARTMENT
AND SPECIALTY STORES
METHODS USED BY RETAILERS TO MEASURE ADVERTISING
RESULTS
REDUCING MERCHANDISE RETURNS IN RETAIL STORES
RETAILING WOMEN'S APPAREL THROUGH STYLE OR FASHION
SHOWS
SUGGESTIVE SELLING IDEAS USED BY DEPARTMENT STORES

Copies may be obtained on request from Policyholders Service
Bureau, Metropolitan Life Insurance Company, One Madison
Avenue, New York City.

A SERVICE TO BUSINESS IN THE INTEREST
OF 27,000,000 PEOPLE

This is one of many publications issued by the Policyholders Service Bureau in the interest of better management in business. The Metropolitan has good reason for desiring to contribute to improved management practices, as they have a direct bearing on the economic well-being of its policyholders. More than one person in every five of the general population -- an average of about one per family -- is a Metropolitan policyholder. An even greater proportion of employees in commerce and industry are insured by the Company.

Because the economic "health" of these policyholders is related directly and inseparably to the well-being of commerce and industry, the Company maintains the Policyholders Service Bureau to conduct a program of economic services to business. The Bureau staff is made up of specialists in the various fields of management -- in business organization; office management; accounting and finance; marketing, distribution, advertising and sales management; in production and personnel management; in business and economic research; in industrial health and accident prevention.

Under the direction of these specialists, investigations of management subjects of current interest to business executives are being conducted continuously. The results of those investigations which are of general interest are published from time to time. A complete list of several hundred reports issued by the Bureau and available for distribution is given in the "Index of Economic Reports". Copies of the Index may be secured on request. Address:

Policyholders Service Bureau
METROPOLITAN LIFE INSURANCE COMPANY
One Madison Avenue
New York, N. Y.

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Budgeting for Hotels



POLICYHOLDERS SERVICE BUREAU
METROPOLITAN LIFE
INSURANCE COMPANY
HOME OFFICE . NEW YORK
Pacific Coast Head Office, San Francisco
British Isles Head Office . . . London
Canadian Head Office Ottawa

BUDGETING FOR HOTELS

NOTE This report was prepared to answer specific questions presented by a Group insurance policyholder of the Metropolitan. It was compiled with special reference to the situation confronting the organization for which the work was done, and is not intended as an all-inclusive discussion of the subject. The report has been made available for general distribution because it is believed that much of its contents will be of interest to executives confronted with similar problems. In its present form, references or material of exclusive interest to the company for which it was prepared, have been removed.

Prepared by
Policyholders Service Bureau
Metropolitan Life Insurance Company
New York City
1927.

BUDGETING FOR HOTELS

The purpose of this study is to outline the basis on which a hotel budget system is built and to show by specific examples applications of plans of budgetary control which have proved successful in progressive hotels.

The contents of the report fall into three main parts:

1. Methods by which income from room rentals, from food sales, and from all other sources of income, may be estimated.
2. Methods of estimating the expenses which will necessarily be incurred in securing this income.
3. Methods of compiling comparative summaries of estimated income and expense for the purpose of determining departmental profit and loss, as well as the total profit and loss.

- 2 -

Mr. J. G. Wilder, General Auditor of the Fairmont and Whitcomb Hotels, San Francisco, California, summarizes the value of a hotel budget as follows:

It has been the general contention that the Hotel Industry is peculiarly unadapted to a budget system, due I presume, to the rather old fashioned idea that expenditures are so irregular as to preclude the possibility of a practical working budget plan. Despite intrinsic difficulties, I have devised a monthly budget system of a practical nature, designed to -

1. Foster economy, consistent with standards.
2. Create interest in cost factors
3. Invite competition on per cent, saving basis.
4. Improve morale, by eliminating haphazard methods.
5. Set up a definite goal for each department.

Room Sales Budget

There are few other industries where the commodity offered for sale is of such a perishable nature as is the case in the hotel business. In general merchandising an article not sold today can probably be sold tomorrow or the next day. The hotel of a thousand rooms has a thousand rooms to be sold each day. If today's use is not sold, it is gone forever, an absolute loss so far as sales are concerned.

The budget of room sales establishes a goal of room revenue for each month and each day in the year based upon past performances and present business conditions. For example, every employee in a hotel directly connected with the selling of rooms should have before him a simple budget such as the following:

FORM 1.

Blank Hotel

Room Sales Budget

DATE	Daily Rooms Available	Daily Rooms Sold	Increase or decrease in			
			Rooms sold over Budget			
	Budget	Actual	Budget	Actual	Day	Date
June 1	:	:	:	:	:	:
2	:	:	:	:	:	:
3	:	:	:	:	:	:
4	:	:	:	:	:	:
	:	:	:	:	:	:
30	:	:	:	:	:	:

- 3 -

Managers and assistant managers can aid in the selling of rooms by securing conventions, by properly handling correspondence in reference to reservations and inquiries, by judicious advertising, etc. These executives should, therefore, be similarly provided with a Room Sales Budget. When they see room sales lagging, it is their business to investigate. Are there less conventions than planned for? Are salesmen going elsewhere? Is the new room clerk turning business away? Such is the nature of the self-analysis developed by the Room Sales Budget.

Form 2, is an example of what may be done in the way of translating anticipated income from rooms into specific budget form. Form 3 may be used to show not only net room revenue from it, but also available information in the way of number of rooms available, number of rooms occupied, percentage of occupancy, etc. may be secured.

FORM 2

Budget of Income From Rooms					
	Month		Year to Date		
		Increase or		Increase or	
		Dec. Actual:		Decrease	
Budget: Actual	over Budget	Budget: Actual	over Budget	Budget: Actual	over Budget
REVENUE					
Guest Rooms	:	:	:	:	:
Public Rooms	:	:	:	:	:
Total	:	:	:	:	:
Less Allowances	:	:	:	:	:
New Room	:	:	:	:	:
Revenue	:	:	:	:	:

REVENUE - In this schedule Revenue is divided between Guests and Public Rooms. Revenue from Guests will consist of revenue received for all rooms which are considered as "living rooms" whether rented for that purpose or not, but exception is made when rooms are rented for purposes other than living rooms for longer than one month, in which case rentals for such shall be added to Public Room revenue. Public Room revenue will consist of revenue for use of rooms in the hotel, such as Ball Rooms, Dining, Reception and Living Rooms, rented for purposes other than living rooms for a period of more than one month, but it will not include revenue received from rent of offices or stores.

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FORM 3

Analysis of Room Sales Income					
Month			Year to Date		
		Increase or Decrease		Increase or Decrease	
	Budget	Actual	over Budget	Budget	Actual
REVENUE	:	:	:	:	:
USE OF ROOMS	:	:	:	:	:
Total Revenue	:	:	:	:	:
Less Allowances	:	:	:	:	:
NET REVENUE	:	:	:	:	:

STATISTICS: Rooms Available
Rooms Occupied
Percentage of Occupancy
Average Receipt per Room
Number of Guests
Average Receipt per Guest

REVENUE - Under this heading will be placed revenue received from each floor, which, when added to total, will signify revenue received for temporary use of rooms. From the resultant total the allowance will be deducted and the remainder or balance will be the net gross revenue applicable to guests.

ROOMS AVAILABLE - should include all rooms that are not used by employees or rented for purposes other than living, for a period exceeding one month or more. Rooms rented for offices are excluded. "Rooms out of order" should be considered available.

Restaurant Sales Budget

Quality of food, quality of service, salesmanship of waiters in the restaurant and counter girls in the cafeteria, the resourcefulness of the banquet manager, all reflect themselves in the successful or unprofitable nature of the restaurant operation.

Larger restaurants and cafeterias have profitably used a daily analysis of sales and costs which gives the gross profit derived from each of the individual groups of commodities. One restaurant may find its roast beef producing 100 per cent, gross profit on cost, while another restaurant of approximately the same size and class may find that its

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roast beef produces only 50 per cent. gross profit on cost.

Form 4 is a form which may be used for estimated and actual income from restaurant sales. It should be noticed that provision is made for comparing the actual figures with the budgeted amounts.

FORM 4

Budget of Restaurant Income						
Comparative Departmental Statement of Operations						
	Month		Year to Date			
		Increase or		Increase or		
		Decrease		Decrease		
	Budget	Actual	Over Budget	Budget	Actual	Over Budget
REVENUE						
Restaurant	:	:	:	:	:	:
Grill Room	:	:	:	:	:	:
Banquets	:	:	:	:	:	:
Dinner Dances	:	:	:	:	:	:
TOTAL REVENUE:	:	:	:	:	:	:
COST OF FOOD (Incl. Employees' meals other than 1st Officers)						
Gross Profit	:	:	:	:	:	:
Miscellaneous Revenue	:	:	:	:	:	:
Sale of Refuse	:	:	:	:	:	:
Miscellaneous Receipts	:	:	:	:	:	:
Extra Couvert Charges	:	:	:	:	:	:
Total Gross Profit	:	:	:	:	:	:

REVENUE from food sales will be analyzed as shown in the form, according to the place where the food is sold. In addition, income from banquets given in private dining rooms, and income from food served in guest rooms will be shown separately. REVENUE shall not include covert charges, however, which are considered "extra" and will be shown under a separate heading.

COUVERT CHARGES - This item under Revenue should be the covert charge made, less the standard charge of 10¢ for bread and butter. If 25¢ is charged as a covert charge, 15¢ of this should be covert charges and 10¢ of it should be carried under Revenue from Food.

By keeping up these records currently the restaurant is able to detect almost immediately when the gross profit on any particular commodity

starts to decline.

Other Departmental Sales Budgets

Besides the principal sources of revenue, rooms and restaurants, most hotels have various minor revenue producing departments such as telephone, valet, laundry, etc., for which sales budgets similar to those for rooms can be devised. All of these budgets may finally be summarized in a master sales budget for which the following is a suggested form:

Blank Hotel

Summary Sales Budget

	Rooms	Restaurant	Laundry	etc.	Valet	Total
: Increase or Decrease:	:	:	:	:	:	:
: in Sales over Budget:	:	:	:	:	:	:
: Daily : Daily : Month : Year :	:	:	:	:	:	:
Date : Budget : Sales : Date : to Date : to Date :	:	:	:	:	:	:
June 1:	:	:	:	:	:	:
2:	:	:	:	:	:	:
3:	:	:	:	:	:	:
4:	:	:	:	:	:	:
:	:	:	:	:	:	:
30:	:	:	:	:	:	:

Same Arrangement as "Rooms"

Expense Budgets

The practice of budgeting the various classes of hotel expense has existed longer and is more frequently found to be in effect than the budgeting of income just discussed. While the primary purpose of estimating expenses in relation to income is to arrive at the total profit or loss on all operations, there is an increasing realization on the part of hotel managers that an analysis of expenses and profit and loss by departments is most helpful.

Room Expenses

Forms 6 and 7 are samples of forms in actual use for budgeting room expenses.

Form 8 illustrates a simple method of making a comparative analysis of rooms department payrolls.

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FORM 6

Budget figures determined by Manager. Work on
Theory of making a saving over three years pre-
vious average actual cost

BUDGET REPORT Department Rooms

1 Month 6 Months

Monthly Increase or

Decrease

Items	Monthly Budget	Actual	Increase or Decrease	To Date	Remarks
Powder and Soap	125.00	122.50	2.40	18.60	
Stationery	125.00	131.10	6.10 x	76.40	
Toilet Paper	40.00	33.28	6.72	21.64	
Cleaning Drapes	40.00	48.00	8.00 x	7.25	
Matches	5.00	5.16	.16 x	2.60	
Brushes	8.00	2.80	5.20	14.82	
Linen Used	850.00	467.20	382.80	182.60	See last Mo.
Labor	3,500.00	3,521.50	21.60 x	74.20	
Misc. Issues	130.00	170.55	70.55 x	149.95	
Repairs to Furn.	1,100.00	681.70	315.30	37.25x	Heavy Chg. in
	5,700.00	5,185.99	606.01	510.81x	in Feb.

x Indicates over Budget Remainder of Figures under Budget

ANALYSIS OF MISCEL.

Laundry Bags 39.20

Blanket Binding 62.48

Waste Baskets 47.45 Unusual items not occurring every month

Other minor

Misc. 21.42

Total 170.55

Form 7

Budget of Room Expense						
	Month	Increase or		Year to Date	Increase or	
		Dec.	Actual:		Dec.	Actual
Departmental Expenses:	Budget:	Actual:	Over Budget:	Budget:	Actual:	over Budget
DEPARTMENTAL EXPENSES	:	:	:	:	:	:
Wages	:	:	:	:	:	:
Uniforms	:	:	:	:	:	:
Gratis Items	:	:	:	:	:	:
Printing & Stationery	:	:	:	:	:	:
Cleaning	:	:	:	:	:	:
Cleaning-Blankets	:	:	:	:	:	:
Cleaning Carpets and	:	:	:	:	:	:
Rugs	:	:	:	:	:	:
Cleaning Curtains	:	:	:	:	:	:
and Draperies	:	:	:	:	:	:
Laundry	:	:	:	:	:	:
Detective and Fire-	:	:	:	:	:	:
men's Service	:	:	:	:	:	:
Lost and Damaged	:	:	:	:	:	:
Articles	:	:	:	:	:	:
Rooms Expense	:	:	:	:	:	:
Public Rooms Expense	:	:	:	:	:	:
Telautograph	:	:	:	:	:	:
Plants and Decorations:	:	:	:	:	:	:
China and Glassware	:	:	:	:	:	:
Expense	:	:	:	:	:	:
Linen Expense	:	:	:	:	:	:
Miscellaneous	:	:	:	:	:	:
Total Expenses	:	:	:	:	:	:

The classification of expense comprises the following:

UNIFORMS:- Tailored uniforms, maids aprons, service uniforms, gloves, maids caps, repairs to uniforms

GRATIS ITEMS:- Lead pencils, matches, paper and envelopes, papers and magazines, pens and inks, shaving rags, shoe rags, wash rags, toilet paper, soaps, etc.

PRINTING AND STATIONERY:- Bulletins, signs, floor plans, office supplies, time table distribution.

CLEANING - MATERIALS - Brooms, brushes, mops, soaps, etc. Elimination, fumigation, statuary cleaning, wall and lobby cleaning, window cleaning.

ROOMS EXPENSE - Floor clerks expense, front office expense,

housekeepers expense, lost and damaged department expense, lines room expense, women's floor expense, rent of sleeping quarters, combs, hair brushes and night clothes.

PUBLIC ROOMS EXPENSE - Entertainment Department expense, mechanical department charges, stage settings, spot light rentals, concert license, miscellaneous.

TELAUTOGRAPH EXPENSE - Rental of equipment and supplies.

MISCELLANEOUS - Fire alarm service, freight and express, marine service, telegrams, petty cash, miscellaneous.

Salaries and Wages
Comparative Analysis of Payrolls
For the Month of

Form 8

	Number of		Amount		Average per		Average	
	Employees		Budget:Actual		Gross Day		Per Room	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
ROOMS DEPARTMENT:								
Assistant Managers:	:	:	:	:	:	:	:	:
FRONT OFFICE								
Manager	:	:	:	:	:	:	:	:
Clerks	:	:	:	:	:	:	:	:
Night Manager and Clerks	:	:	:	:	:	:	:	:
TOTAL FRONT OFFICE:	:	:	:	:	:	:	:	:
HOUSEKEEPER:								
Housekeeper and Assistants:	:	:	:	:	:	:	:	:
Clerks	:	:	:	:	:	:	:	:
Chambermaids	:	:	:	:	:	:	:	:
Bathmaids	:	:	:	:	:	:	:	:
Bed Room Floor Housemen	:	:	:	:	:	:	:	:
Cleaners	:	:	:	:	:	:	:	:
TOTAL HOUSEKEEPER:	:	:	:	:	:	:	:	:
SERVICE - GENERAL								
Elevator Starter	:	:	:	:	:	:	:	:
Elevator Oprs.-Passenger	:	:	:	:	:	:	:	:
" " -Service	:	:	:	:	:	:	:	:
Lobby Floor Housemen & Street Cleaners	:	:	:	:	:	:	:	:
Lobby Floor and Telephone Maids	:	:	:	:	:	:	:	:
Doormen and Footmen	:	:	:	:	:	:	:	:
TOTAL SERVICE - GENERAL	:	:	:	:	:	:	:	:

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Salaries and Wages
Comparative Analysis of Payrolls
For the Month of

Form 8 (Continued)

	: Number of	:	: Average Per	:	: Average	:	:
	: Employees	: Amount	: Guest Day	:	: Per Room	:	:
	: Budget:Actual:	: Budget:Actual:	: Budget:Actual:	:	: Budget:Actual:	:	:
SERVICE - GUESTS:	:	:	:	:	:	:	:
Superintendent and Assistants	:	:	:	:	:	:	:
Bell Boys and Pages	:	:	:	:	:	:	:
Parcel Room Employees	:	:	:	:	:	:	:
Floor Clerks	:	:	:	:	:	:	:
Page Girls	:	:	:	:	:	:	:
Tube Clerks	:	:	:	:	:	:	:
TOTAL SERVICE - GUESTS	:	:	:	:	:	:	:
HOUSE OFFICERS:	:	:	:	:	:	:	:
House Officers	:	:	:	:	:	:	:
Watchmen	:	:	:	:	:	:	:
TOTAL HOUSE OFFICERS	:	:	:	:	:	:	:
ENTERTAINMENT DEPARTMENT	:	:	:	:	:	:	:
Entertainment Manager	:	:	:	:	:	:	:
Clerks	:	:	:	:	:	:	:
Captain	:	:	:	:	:	:	:
Page girls	:	:	:	:	:	:	:
Parlormaids	:	:	:	:	:	:	:
Housekeeper	:	:	:	:	:	:	:
Housemen	:	:	:	:	:	:	:
Polishers	:	:	:	:	:	:	:
TOTAL ENTERTAINMENT DEPARTMENT:	:	:	:	:	:	:	:
Less: Charged Banquet Department	:	:	:	:	:	:	:
NET ENTERTAINMENT DEPARTMENT:	:	:	:	:	:	:	:
TOTAL ROOM DEPARTMENT	:	:	:	:	:	:	:

FRONT OFFICE CLERKS: To include Room, Back, Information, Key Mail, Record, File & Relief Clerks, Elliott Fisher Rack, Slip Operator and stenographers, but not to include tube clerks, also include information operator.

NIGHT MANAGER AND CLERKS: To include all clerical employees with exception of Night Auditors, charge under Front Office Bookkeeping,

CLEANERS: To include general cleaners, polishers and furniture cleaners, wall washers and paint-cleaners, vacuum and elevator cleaners. (Window cleaners should be distributed to cleaning materials. See payroll "Cleaning")

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ELEVATOR OPERATORS: Service: Under the heading of service elevator operators, are included all service elevator operators without respect to the location of elevator.

SUPERINTENDENT & ASSISTANTS: Includes Bell Captains

HOUSEMEN should be segregated under the headings of Bed Room Floor Housemen, Lobby Floor Housemen, Entertainment Department.

BANQUET DEPARTMENT should be charged with a proportion of the Entertainment Department and the amount charged thereto deducted direct.

Restaurant Expense Budget

In the same way that expenses chargeable to the operation of the rooms department may be budgeted and analyzed, the expenses of operating the restaurant should be summarized on one budget form.

Form 9 illustrates a budget of restaurant expense.

Form 9

	Budget of Restaurant Expense					
	Month			Year to Date		
	:	:	:	:	:	:
	:	:	:	:	:	:
	Budget	Actual	Over Budget	Budget	Actual	Over Budget
DEPARTMENTAL EXPENSES	:	:	:	:	:	:
Commission on Purchases	:	:	:	:	:	:
Wages	:	:	:	:	:	:
Uniforms	:	:	:	:	:	:
Gratis Items	:	:	:	:	:	:
First Officers Meals	:	:	:	:	:	:
Laundry	:	:	:	:	:	:
Music	:	:	:	:	:	:
Kitchen Expense	:	:	:	:	:	:
Kitchen Fuel	:	:	:	:	:	:
Menus	:	:	:	:	:	:
Printing & Stationery	:	:	:	:	:	:
Cleaning	:	:	:	:	:	:
Banquet Dept. Expense	:	:	:	:	:	:
Plants & Decorations	:	:	:	:	:	:
Miscellaneous Expense	:	:	:	:	:	:
Lost and Damaged Articles	:	:	:	:	:	:
Linen Expense	:	:	:	:	:	:
China & Glass Expense	:	:	:	:	:	:
Silver Expense	:	:	:	:	:	:
Total Expense	\$	:	:	:	:	:

UNIFORMS contain cooks' aprons, caps, coats, bus boys' uniforms, waiters' uniforms.

GRATIS ITEMS includes souvenirs, candy, given to guests in the restaurant, newspapers and all holiday souvenirs.

EMPLOYEES' MEALS: As the cost of food in all units includes employees' meals other than first officers, any cost of feeding employees outside of the individual unit should be added to this amount. Employees' meals should be deducted from the revenue before it appears on the statement.

OFFICERS' MEALS: These are included in the expense and are at 50 per cent. of menu prices. The amount charged under this heading is arbitrary because of difficulty of arriving at costs. Corresponding credit of amount charged will be placed against cost of food.

KITCHEN EXPENSE will include beverages to kitchen, food inspection, gas range rental, food accountants fees, sawdust, alcohol, trucking cartage and motor truck expense, cost of cooks and stewards meeting, repairs to utensils such as re-tinning and relining, etc., also removal of kitchen equipment. Usual expense supplies will be included in kitchen expense, also ice, telautograph expense, doilies, paper and twine and detective service.

KITCHEN FUEL will contain kitchen coal, gas and charcoal.

CLEANING will contain cleaning material, mops, brooms, brushes, window cleaning, soap, brass polish, sanitary supplies and cleaning carpets and rugs.

General Expenses

In addition to budgeting the estimated expenses directly applicable to the operation of the rooms department and the restaurant, it is most desirable that budgets covering the general operating expenses be prepared. This is true, not only because estimates covering all sources of income and all items of expense necessarily are included in any complete plan of budgetary control but also, and a more important reason, because the amount and nature of general expenses as a class are frequently given too little consideration, with the result that at the end of a month or year, it is discovered that they have increased to unexpected proportions, with a resulting unanticipated decrease in net profits.

Forms 10 to 16, which follow, show how these various general expenses may be budgeted and controlled. The forms shown are:

- Form 10 Budget of Advertising Expense
- 11 " " Heat, Light, Power & Refrigeration Expense

- 13 -

Form 12 Budget of Engine Room & Maintenance Expense
13 " " General and Unapportioned Expense

Owing to the fact that it is impossible for the accountant to procure all the bills for advertising incurred during the month, the schedule below will show the actual bills received, together with the expense incurred.

Form 10						
ADVERTISING						
Month			Year to Date			
			Increase De-		Increase De-	
			crease Over		crease Over	
	Budget	Actual	Budget	Budget	Actual	Budget
Insertions in Newspapers	:	:	:	:	:	:
Insertions in Magazines	:	:	:	:	:	:
Insertions in Theatre Programs:	:	:	:	:	:	:
Insertions in Other Pub-	:	:	:	:	:	:
lications	:	:	:	:	:	:
Trade Advertising	:	:	:	:	:	:
Wages	:	:	:	:	:	:
Soliciting Department Expenses	:	:	:	:	:	:
MISCELLANEOUS EXPENSES:	:	:	:	:	:	:
Printing & Stationery	:	:	:	:	:	:
Postage	:	:	:	:	:	:
Circulars	:	:	:	:	:	:
Subscriptions	:	:	:	:	:	:
Total Advertising	:	:	:	:	:	:

Heat, Light, Power, and Refrigeration

The cost of heat, light, power, and refrigeration is an overhead expense of hotel operation which, while it is not practical to pro-rate it to each room or each department of the hotel, should, nevertheless be accurately figured. It will be noticed in the form below that certain of the products of this department such as steam, electric current, etc. may be sold to concerns which permanently occupy floor space, such as a drug store on the street floor. The heat, light, power, and refrigeration budget may, therefore, be an income as well as an expense budget.

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Form 11

HEAT, LIGHT, POWER, & REFRIGERATION						
Month			Year to Date			
			Increase or		Increase or	
			Decrease		Decrease	
Budget	Actual	over Budget	Budget	Actual	over Budget	
DEPARTMENTAL EXPENSES	:	:	:	:	:	:
Wages	:	:	:	:	:	:
Coal	:	:	:	:	:	:
Water	:	:	:	:	:	:
Removal of Ashes	:	:	:	:	:	:
Emergency Breakdown	:	:	:	:	:	:
Maintenance Material	:	:	:	:	:	:
Miscellaneous Expenses	:	:	:	:	:	:
(Incl. Freight & Express)	:	:	:	:	:	:
Total Expenses	:	:	:	:	:	:
REVENUE:	:	:	:	:	:	:
Sale of Steam	:	:	:	:	:	:
Sale of Electric Current	:	:	:	:	:	:
Sale of Labor	:	:	:	:	:	:
Miscellaneous Sales	:	:	:	:	:	:
Total Revenue	:	:	:	:	:	:
Departmental Cost	:	:	:	:	:	:

STATISTICS:

Coal Consumption-in tons
Average price per ton
Incinerator coal-in tons
Water consumption - cu.ft.
Gas consumption - cu.ft.
Cans of ice harvested
Tons of refrigeration
Kilowat hours produced
Kilowat hours purchased
Cans of ashes
Loads of Rubbish
pounds of Waste Paper
Passenger Car Miles
Service Car Miles
Electric Car Miles

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MAINTENANCE MATERIAL - Maintaining Plant - Includes the expense of packing, waste, boiler compound, ammonia, oil, grease, lubricants, cleaning supplies, refrigerating supplies, etc.

GENERAL MECHANICAL SUPPLIES - All maintenance other than Plant includes all items of hardware, small tools, elevator supplies, plumbing and heating supplies, electrical supplies, lamps, etc.

HEAT, LIGHT & POWER EXPENSES - Contains elevator license.

COST OF SUNDRY SALES - Deducted from Miscellaneous Sales and carried in the REVENUE NET.

SALE OF ICE - Shown under Revenue.

Form 12

**DEPT. ENGINE ROOM & MAINTENANCE
BUDGET REPORT MONTH OF April, 1924**

Items	Monthly: Budget:	Actual	: Increase or Decrease	: To Date	: Remarks
Fuel Used	1,600.00:	1,505.75	: 94.25	: 186.75	:
Oils & Grease	30.00:	32.55	: 2.55x	: 7.14	:
Soap and Powder	6.00:	1.64	: 4.36	: 8.07	:
'phone Calls	5.00:	7.45	: 2.45	: 1.15	:
Misc. Supplies	22.00:	18.93	: 3.07	: 7.84	:
Labor	1,700.00:	1,721.40	: 21.40x	: 69.75x	: Increase in wage scale
Repairs to Equip:--					
Engine Room	155.00:	244.60	: 89.60	: 21.14	:
Elevators	85.00:	76.79	: 8.21	: 216.40x	: Break down in Feb.
Laundry	50.00:	42.25	: 7.75	: 18.63	:
Electrical (X)	360.00:	397.40	: 37.40x	: 143.21	:
Ice Plant #	85.00:	67.11	: 17.89	: 12.14	:
Kitchen (Not Incl. Utensils)	35.00:	7.85	: 27.15	: 64.77	:
Rep. to Bldg.	400.00:	529.40	: 129.40x	: 13.21x	:
Carpenter's					
Supplies	175.00:	168.25	: 6.75	: 34.20	:
Painters					
Supplies	175.00:	39.72	: 135.28	: 91.40	:
Total	4,883.00:	4,861.09	: 21.91	: 281.40	

(X) Electrical	(globes 148.20	Calcium 17.40
	(repairs 216.77	# Ice Plant Ammonia 39.84
	(supplies 32.43	Oil 9.87
	<u>397.40</u>	<u>67.11</u>

x Increase

General and Unapportioned Expenses

This schedule contains only such charges as are applicable to the hotel as a whole, which cannot be readily apportioned to Departmental Revenue or Expense schedules. Charges which are important will occur from time to time that are not listed in this schedule. Where such charges are incurred, the item or items should be shown separately.

Form 13

	General and Unapportioned Expenses					
	Month		Year to Date		Increase or Decrease	
	Budget	Actual	Budget	Actual	over Budget	over Budget
Administration Service	:	:	:	:	:	:
Private Office Salaries	:	:	:	:	:	:
Executive Office Charges	:	:	:	:	:	:
Special Compensation to Employees and Officers	:	:	:	:	:	:
Accountants and Treasurer's Salaries	:	:	:	:	:	:
Accountants and Treasurer's Office Expenses	:	:	:	:	:	:
Heat, Light, Power, & Refrigeration	:	:	:	:	:	:
Advertising	:	:	:	:	:	:
Compensation Insurance	:	:	:	:	:	:
Other Insurance (except fire on buildings)	:	:	:	:	:	:
Printing and Stationery	:	:	:	:	:	:
Postage	:	:	:	:	:	:
Freight and Express	:	:	:	:	:	:
Drinking Cups	:	:	:	:	:	:
Warehouse and Storage Expense	:	:	:	:	:	:
Travelling Expense	:	:	:	:	:	:
Purchasing Department Expense	:	:	:	:	:	:
Legal Expense	:	:	:	:	:	:
Accountants Fees	:	:	:	:	:	:
Exchange	:	:	:	:	:	:
Reserve for Bad Debts	:	:	:	:	:	:
Capital Stock Taxes	:	:	:	:	:	:
Miscellaneous	:	:	:	:	:	:
Total						

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OTHER INSURANCE, contains Group Insurance, Bonds, Water Damage, Boiler Fly Wheel, Hold-Up, Payroll and any other insurance except Fire on Buildings, other than Employees Liability.

PRINTING AND STATIONERY, includes Stationery Clerk's salary.

POSTAGE, charge all Postage where it can be charged departmentally, Charge under Departments, Miscellaneous Expense.

FREIGHT AND EXPRESS - Charged Departmentally except as heat, light and power, as items under this caption are often for repairs and hard to determine.

ADVERTISING - covers Subscriptions to Police Games, Advertising Memberships, Benefit Associations, etc.

DRINKING CUPS - Cover Paper drinking cups.

Budgeted Profit and Loss Statements

A complete budget for a hotel should include a Summary Profit and Loss Budget and a separate Profit and Loss Budget for each department. The average metropolitan hotel would show at least ten revenue producing departments in addition to which there are auxiliary departments such as engineering, carpentry, painting, etc. Such profit and loss budgets can be compiled either on a daily or monthly basis. Many hotels are to-day using daily profit and loss statements such as these and a daily profit and loss budget is but one step in advance.

The following summary forms are reproduced:

Form 14 - Salaries and Wages - Comparative Analysis of Payroll.

Form 15 - Summary Payroll Budget

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Salaries and Wages
Comparative Analysis of Payroll
For the Month of

Form 14

	Budget		Actual		Increase or
	Number of:	Amount:	Number of:	Amount:	Decrease over
	Employees:		Employees:		Budget
GENERAL HOUSE:					
Assistant Managers	:	:	:	:	:
Front Office	:	:	:	:	:
Housekeeper	:	:	:	:	:
Service - General	:	:	:	:	:
Service - Guest	:	:	:	:	:
House Officers	:	:	:	:	:
Entertainment Department	:	:	:	:	:
TOTAL GENERAL HOUSE:	:	:	:	:	:
FOOD:					
Supervision	:	:	:	:	:
Preparation	:	:	:	:	:
Dishwashing, etc.	:	:	:	:	:
Kitchen Miscellaneous	:	:	:	:	:
Maitre d'Hotel and Assistants	:	:	:	:	:
Service - Restaurants	:	:	:	:	:
Service - Floors	:	:	:	:	:
Banquets	:	:	:	:	:
Helps' Hall	:	:	:	:	:
Checkers	:	:	:	:	:
Miscellaneous	:	:	:	:	:
TOTAL FOOD:	:	:	:	:	:
BEVERAGES					
CIGARS AND CIGARETTES	:	:	:	:	:
CANDY SHOP	:	:	:	:	:
TELEPHONES	:	:	:	:	:
VALET	:	:	:	:	:
C. W. B.	:	:	:	:	:
NEWS STAND	:	:	:	:	:
THEATRE TICKETS	:	:	:	:	:
HOSPITAL	:	:	:	:	:
GUEST LAUNDRY	:	:	:	:	:
PORTERS	:	:	:	:	:
STENOGRAPHERS	:	:	:	:	:
TOTAL OPERATING DEPARTMENTS:	:	:	:	:	:
MISCELLANEOUS					
Manager's Office	:	:	:	:	:
Accounting and Treasurer	:	:	:	:	:
Heat, Light, Power and Refrigeration	:	:	:	:	:
Maintenance	:	:	:	:	:
House Laundry	:	:	:	:	:
Stationery, Advertising & Print Shop	:	:	:	:	:
Window and Lobby Cleaners	:	:	:	:	:
Employees' Valet	:	:	:	:	:
Ash Removal	:	:	:	:	:
TOTAL MISCELLANEOUS:	:	:	:	:	:
TOTAL PAYROLL:					

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HOTEL BLANK

SUMMARY PAYROLL BUDGET

Form 15

	Day (or Month)		Month (or Year) to Date	
	Actual	Budget	Actual	Budget
	Number	Amount	Number	Amount
Rooms: Front Office				
Bellmen	:	:	:	:
Elevator	:	:	:	:
Watchmen	:	:	:	:
Housekeeper	:	:	:	:
Total to Sched. No. 1	:	:	:	:
Food: Steward				
Kitchen and pantry	:	:	:	:
Bake Shop	:	:	:	:
Dining Room	:	:	:	:
Total to Sched. No. 2	:	:	:	:
Beverages and Candy No. 3	:	:	:	:
Telephone Sched. No. 4				
Barber Shop " " 5	:	:	:	:
Porter " " 7	:	:	:	:
Officers " " 8	:	:	:	:
Office " " 8	:	:	:	:
Music " " 8	:	:	:	:
Engineer " " 9	:	:	:	:
Valet	:	:	:	:
Laundry	:	:	:	:
Maintenance	:	:	:	:
Total				

AN ECONOMIC SERVICE TO BUSINESS

This is one of numerous publications issued by the Policyholders Service Bureau in the interest of better management in business. The Metropolitan has good reason for desiring to contribute, so far as practicable, to improved practices in management. Effective management is a vital factor in the continuous and profitable operation of business enterprises and helps to bring about steady work and regular income for Metropolitan policyholders, who number more than one out of five of the general population. An even greater proportion than one-fifth of the employees in commerce and industry are insured by the Metropolitan Life Insurance Company. The relationship between prosperous policyholders and the company's progress is obvious.

Because of its great stake in the nation's economic life, the company has set up the Policyholders Service Bureau to carry out a program of economic service to business. The Bureau staff is made up of specialists in the various fields of management -- in business organization, office management, accounting and finance; in marketing, distribution, advertising and sales management; in production and personnel management; in business and economic research; in industrial health and accident prevention.

Investigations of subjects of current interest to business executives are continually being carried on by the Bureau's specialists in these various fields of management. Reports of such of these investigations as are of general interest are published from time to time. For additional information about the work of the Bureau or its published reports, address;

Policyholders Service Bureau
Metropolitan Life Insurance Company
One Madison Avenue
New York City

Budget for an Investment House

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POLICYHOLDERS SERVICE BUREAU
**METROPOLITAN LIFE
INSURANCE COMPANY**
HOME OFFICE . NEW YORK
Pacific Coast Head Office, San Francisco
British Isles Head Office . . . London
Canadian Head Office Ottawa

BUDGET FOR AN INVESTMENT HOUSE

NOTE This report was prepared to answer specific questions presented by a Group insurance policyholder of the Metropolitan. It was compiled with special reference to the situation confronting the organization for which the service was rendered, and is not intended as an all-inclusive discussion of the subject. The report has been made available for general distribution because it is believed that the contents may be of interest to executives confronted with similar problems. In the form here presented, references or material of exclusive interest to the company for which it was prepared, have been removed.

The report aims to present factually the methods and practices of business men in meeting the particular problem considered. Opinions cited are those of the contributors, and their use in the report does not indicate any endorsement on the part of the Metropolitan Life Insurance Company.

Prepared by
Policyholders Service Bureau
Metropolitan Life Insurance Company
New York City
1928
Revised 1933

BUDGET FOR AN INVESTMENT HOUSE

This report presents a description of the budgeting methods employed by an organization operating a number of utilities in addition to other varied enterprises. Securities of their subsidiary and holding companies are marketed through a Securities Department which is set up as a separate organization for this purpose. This company has in successful operation a complete budget program taking in all phases of its activities. The budgeting procedure of the Securities Department, however, although tied in with the general budget for control purposes, is operated to some extent as an entity. It is the procedure as employed by this department which is described here.

The company maintains some twenty-five District Sales Offices throughout the country, many of which have sub-offices. For budgeting purposes the District Manager and the Office Manager of each office are responsible to the Budget Supervisor of the Securities Department and all negotiations and transactions are conducted through him. The Budget Supervisor clears the budget with the Sales Manager, the Manager of all office operations, and the Manager of the Securities Department.

Budgets are prepared on an annual basis for the calendar year. Two sets of estimates are presented by each District Sales Office. The first is a preliminary budget which must be in the Budget Supervisor's hands by September 15th of the year preceding the one for which the estimates are submitted. This budget estimates the requirements for the year in total according to a standard classification of income and expense items. (See Form I) These preliminary estimates are reviewed, compared and consolidated, and items

definitely out of line are investigated.

Subsequently, a final budget is presented by each District Sales Office prior to November 15th, and these budget estimates are supplied for each item of expense and sales by months for the twelve months of the ensuing year (See Form II). These final budgets again are reviewed, compared and consolidated and upon concurrence, constitute a definite plan for each office for the year in question.

For purposes of budgeting, the expenses are divided into two groups, one constituting the items known as general overhead, the other representing strictly selling salary expense. The following items are included under the general overhead group;

1. Office Salaries
2. Managers and Supervisors' Salaries
3. Traveling
4. Dues and Entertaining
5. Circulars, News and Periodicals
6. Telegraph, Telephone and Postage
7. Rent
8. Stationery, Printing and Office Supplies
9. Taxes-License Fees
10. Premium on Surety Bonds
11. Prizes
12. Advertising-Newspaper
13. Advertising-Direct Mail
14. Loss on Salesmen's Accounts
15. Loss on Salesmen's Guarantees
16. Salesmen's Meetings
17. Miscellaneous

The second group includes the following:

1. Salesmen's Commissions (Net)
2. Supervisors' Commissions (Net)
3. New Client Commissions (Net)

The sum of the estimates for the two groups above represent the expense budget for the office in question.

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Sales are estimated for each District Office under the following headings:

Gross Sales
Cancellations (orders - not fully consummated)
Net Sales
Common Stock
Other Securities
Net Sales Value - Paid Sales (\$)
Less Four Months Sellouts
Net Placement Value (\$)

In each case the total dollar market value is employed rather than using other possible units of number of shares or par value. This is done in order to place all offices on a comparable basis which would not be possible if either of the other two bases of estimating was employed. In preparing sales budgets, the District Sales Offices are expected to prepare their own estimates independently. However, the offices are given suggestions as to policy, i.e., expansion, retrenchment, etc. Naturally where the sales figures vary materially from the general trend among other offices, and from past experience, they must be justified, and moreover, the expense items must be kept in proper relations. Expenses are budgeted on a minimum basis, without slush-funds, error factors, etc. It is the aim of this organization to permit full autonomy to each District Office in the preparation of its budget, with the Budget Supervisor acting in an advisory, coordinating and consolidating capacity.

Unit Costs

As a means of securing better budgetary control and in order to reduce all budgets to a comparable basis, a column is provided on the budget estimate form to show the unit cost per \$100 net sales value for each item

of expense. This reduces all to a common unit and has been found extremely effective as a means of reflecting fluctuations between items or between periods or between districts. By carefully watching the unit cost performance the tendency for a material departure from the planned budget can be located readily.

The forms employed for both the preliminary and final budget estimates are included in order to illustrate this part of the budget procedure.

Adjustments

One of the best features of the budget procedure under review is a plan for the revision or adjustment of budget estimates as conditions warrant. This company does not believe that any set of budget estimates can be definitely fixed at the beginning of a year and strictly adhered to throughout the year without revision. Many circumstances can transpire to affect these estimates, such as a revision in the allocation of sub-offices among districts. In order to provide for such revisions, however, the company employs a form known as "Anticipated Differences from Original Budget Figures" (See Form III). Revisions of the original estimates are reported on this form as far in advance of the months involved as possible. Columns are provided for separate months and proposed adjustments, either up or down, are noted in each column for each item affected. This report is accompanied by adequate explanation and must be approved before the revisions are considered effective. In this way the budget is kept consistently up to date with current conditions and by this means it is possible for the financial executive to anticipate cash requirements a month or two in advance with definite certainty that the estimates are going to materialize.

At the end of each month a report is prepared for the Budget Department, by the Accounting Department, to show for each district the relation of actual to estimated performance (see Form IV). This form shows for each item of expense the following information both for the current month and cumulative for the year to date:

(a) Actual expenditures (comparatively with figures for the same period last year)
 (b) Unit cost per \$100 of Cash Value for Sales
 (c) Estimated Expense and
 (d) the Assigned Difference.

The last three items are shown only for the descriptive figures and not for the current month. By this means each District Office is informed monthly of the extent to which it is meeting its budget. In the event of material discrepancies satisfactory explanations are required.

Local Approval 19....

SECURITIES DEPARTMENT

ESTIMATE

Mgr.

Company

Office

Items	19 (NEXT YEAR)			19 (THIS YEAR)		
	Estimate	Unit Cost Per \$100 Net Placement Value		Original Estimate	Revised Expectancy	Unit Cost Per \$100 Net Placement Value
A	B	C	D	E	F	G
1 Office Salaries						
2 Managerial and Supervisory Salaries						
3 Traveling						
4 Dues and Entertaining						
5 Circulars, News and Periodicals						
6 Telegraph, Telephone and Postage						
7 Rent						
8 Stationery, Printing and Office Sup.						
9 Taxes - License Fees						
10 Premium on Surety Bonds						
11 Prizes						
12 Advertising - Newspaper						
13 Advertising - Direct Mail						
14 Loss on Salesmen's Accounts						
15 Loss on Salesmen's Guarantees						
16 Salesmen's Meetings						
17 Miscellaneous						
18						
19						
20						
21 Total Overhead						
22 Salesmen's Commissions (Net)						
23 Supervisory Commissions (Net)						
24 New Client Commissions (Net)						
25 Total Commissions						
26						
27						
28						
29 Total Expense						
30						
31						
32						
33 Gross Sales - Common Stock (\$)		x x x				x x x
34 Cancellations " " "		x x x				x x x
35 Net Sales " " "		x x x				x x x
36 Other Securities (\$)		x x x				x x x
37		x x x				x x x
38						
39 Net Sales Value - Paid Sales (\$)		x x x				x x x
40 Less Four Months Sellouts..... %		x x x				x x x
41 Net Placement Value (\$)		x x x				x x x
42						
43						
44 - STATISTICS -						
45 Average No. Field Managers		x x x				x x x
46 " " Salesmen		x x x				x x x
47 " " In Office Salaries		x x x				x x x
48						
49		x x x				x x x
50		x x x				x x x
51		x x x				x x x
52						
53 - EMPLOYEES CAMPAIGN -						
54 Average No. of Employees		x x x				x x x
55 Average Per Employee Per Campaign						
56 Sales Per \$100 Sales Value		x x x				x x x
57		x x x				x x x

FORM I

First Half }
Second Half } 12 Months Ending 19.....

SECURITIES DEPARTMENT

S-1 ESTIMATE

Company

Office

		Months					
A		B	C	D	E	F	G
1	Office Salaries						
2	Managers and Supervisors Salaries						
3	Traveling						
4	Dues, Entertaining and Miscellaneous						
5	Circulars, News and Periodicals						
6	Telegraph, Telephone and Postage						
7	Rent						
8	Stationery, Printing and Office Sup.						
9	Taxes - License Fees						
10	Premium on Surety Bonds						
11	Prizes						
12	Advertising - Newspaper						
13	Advertising - Direct Mail						
14	Loss on Salesmens Accounts						
15	Loss on Salesmens Guarantee						
16	Salesmens Meetings						
17	Miscellaneous						
18							
19							
20							
21	Total Overhead						
22	Salesmens Commissions (Net)						
23	Supervisory Commissions (Net)						
24	New Client Commissions (Net)						
25	Total Commissions						
26							
27							
28							
29	Total Expense						
30							
31							
32							
33	Gross Sales-Common Stock (\$)						
34	Cancellations " " "						
35	Net Sales " " "						
36	Other Securities (\$)						
37							
38							
39	Net Sales Value - Paid Sales (\$)						
40	Less Four Months Sellouts..... %						
41	Net Placement Value (\$)						
42							
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							

FORM II

ANTICIPATED DIFFERENCES FROM ORIGINAL BUDGET FIGURES

List below only the anticipated changes (increases or decreases) in the budget figures. Show increases in black and decreases in red. Under "Remarks" give the reasons for these variations.

		Months				Remaining Months	Total
		B	C	D	E		
A						F	G
1	Office Salaries						
2	Managers and Supervisory Salaries						
3	Traveling						
4	Dues, Entertaining						
5	Circulars, News, Periodicals						
6	Telegraph, Telephone, Postage						
7	Rent						
8	Stationery, Printing, Office Supplies						
9	Taxes, License Fees						
10	Premium on Surety Bonds						
11	Prizes						
12	Advertising - Newspaper						
13	Advertising - Direct Mail						
14	Loss on Salesmens Accounts						
15	Loss on Salesmens Guarantees						
16	Salesmans Meetings						
17	Miscellaneous						
18							
19							
20							
21	TOTAL OVERHEAD						
22	Salesmens Commissions (Net)						
23	Supervisory Commissions (Net)						
24	New Client Commissions (Net)						
25	TOTAL COMMISSIONS						
26							
27							
28							
29	TOTAL EXPENSE						
30							
31	Furniture and Fixtures						
32							
33	Gross Sales (\$)						
34	Cancellations						
35	Net Sales (\$)						
36	Common						
37	Other Securities						
38							
39							
40							

REMARKS

New York Concurrence

District Manager

SECURITIES OFFICE EXPENSES

Full Time

Office

(Dollars Only)

Month Ending

Item	Actual - Month		Actual - Year to Date		(A) Unit Cost	This Year Estimated	Anticipa Differen
	This Year	Last Year	Last Year	This Year			
A	B	C	D	E	F	G	H
1 Office Salaries							
2 Managerial and Supervisory Salaries							
3 Traveling							
4 Dues and Entertaining							
5 Circulars, News, Periodicals							
6 Telegraph, Telephone, Postage							
7 Rent							
8 Stationery, Printing, Office Supplies							
9 Taxes, Licence Fees							
10 Premium, Surety Bonds							
11 Prizes							
12 Advertising, Newspaper							
13 Advertising, Direct Mail							
14 Loss on Salesmans Accounts							
15 Loss on Salesmans Guarantees							
16 Salesmens Meetings							
17 Miscellaneous							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27 Total Overhead-Before Comm.							
28							
29 Salesmans $\frac{1}{4}$ Commissions (Net)							
30 Salesmans $\frac{1}{4}$ Commissions (Net)							
31 Supervisory Commissions (Net)							
32 Total Commission Expense							
33							
34 Total Cost of Operation							
35							
36 Sub-Office							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							
51 Units of \$100. of Cash Value of Net Sales							
52 Allowable Overhead Expense (Line 51 x)							
53 Less: Cost of Operation - Excluding Commissions (Line 27)							
54 Balance							

(A) Expense per \$100. of Cash Value Net Sales

Other Metropolitan publications which may be of interest to readers of this report include the following:

CHARTS AND EXHIBITS IN ANNUAL REPORTS TO STOCKHOLDERS

FINANCIAL STATEMENTS IN ANNUAL REPORTS TO STOCKHOLDERS
OF INDUSTRIAL AND MERCANTILE COMPANIES

LIFE INSURANCE IN CONNECTION WITH A BOND ISSUE

PROFIT SHARING IN BANKS AND FINANCIAL INSTITUTIONS

THE RADIO EXPERIENCE OF FINANCIAL ADVERTISERS

Copies may be obtained on request from Policyholders Service Bureau, Metropolitan Life Insurance Company, One Madison Avenue, New York City.

A SERVICE TO BUSINESS IN THE INTEREST

OF 27,000,000 PEOPLE

This is one of many publications issued by the Policyholders Service Bureau in the interest of better management in business. The Metropolitan has good reason for desiring to contribute to improved management practices, as they have a direct bearing on the economic well-being of its policyholders. More than one person in every five of the general population -- an average of about one per family -- is a Metropolitan policyholder. An even greater proportion of employees in commerce and industry are insured by the Company.

Because the economic "health" of these policyholders is related directly and inseparably to the well-being of commerce and industry, the Company maintains the Policyholders Service Bureau to conduct a program of economic services to business. The Bureau staff is made up of specialists in the various fields of management -- in business organization; office management; accounting and finance; marketing, distribution, advertising and sales management; in production and personnel management; in business and economic research; in industrial health and accident prevention.

Under the direction of these specialists, investigations of management subjects of current interest to business executives are being conducted continuously. The results of those investigations which are of general interest are published from time to time. A complete list of several hundred reports issued by the Bureau and available for distribution is given in the "Index of Economic Reports". Copies of the Index may be secured on request. Address:

Policyholders Service Bureau
METROPOLITAN LIFE INSURANCE COMPANY
One Madison Avenue
New York, N. Y.

**BUDGET
SUGGESTIONS
FOR SHOE
MANUFACTURERS**



Metropolitan Life Insurance Company
METROPOLITAN LIFE
INSURANCE COMPANY
100 CHURCH STREET
NEW YORK, N. Y. 10038
In New York, the largest
and most successful

BUDGET SUGGESTIONS

For

SHOE MANUFACTURERS

Policyholders Service Bureau
METROPOLITAN LIFE INSURANCE COMPANY
New York City

FOREWORD

Budgeting for shoe manufacturers is one of the reports on budgeting prepared by the Policyholders' Service Bureau. The following reports are available on the subject of budgeting:

- The Significance of the Budget
- The Sales Budget
- Establishing Sales Quotas
- The Bonus and the Budget
- Budgeting for the Canner
- Budget for the Department Store
- Budget Plan for the Garment Industry
- Budgeting for Metal Working Establishments
- Budgeting for the Newspaper
- Budgeting in Steamship Companies

Through its diverse contacts with every type of industry, the Bureau has access to business information which it can, in turn, pass on to interested business executives. The Bureau also maintains a staff of specialists who are always available to Metropolitan group insurance policyholders for consultation in regard to individual problems.

We are glad to correspond with policyholders and others interested in the subject matter of this report.

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BUDGET SUGGESTIONS

FOR

SHOE MANUFACTURERS

Shoe manufacturers have long been accustomed to dealing both in terms of volume and value with such items as material allowances and estimates. In the matter of planning material requirements, for example, it has been a common practice for years to allow a certain number of feet of upper leather for each pattern, size and width cut and to demand that the Cutting Department keep within the allowance stated. Similarly, estimates of the amount of material needed for trimmings, linings and sole leather are made and production executives are given to understand that they are to keep within the limit stated. The use of a day sheet as a basis for production control and establishment of schedules of requirements for lasts, bottom stock and findings is a common example of methods of estimating which are in common use in shoe factories.

Relation of Standard Costs to Budgeting

Although the phrase "budgetary control" is relatively new, the term standard costs, as expressing the value phase of allowances and estimates, is well known. In fact, one well known New England accountant who has had years of experience in planning and installing accounting systems in shoe manufacturing plants, when questioned regarding the budget methods of his clients, replied that in his estimation what is now called budgeting is merely a new term for the establishment of standards and estimates,--a thing which the industry has been doing for many years.

BUDGET SUGGESTIONS FOR SHOE MANUFACTURERS

COST ESTIMATE SHEET

DESCRIPTION

No. 1 Mahogany CF WH Qtr Blu—Unlined
Rajah Last—Single Sole—Nat Grain

Sample No. 7254
Case No., Price \$380

MATERIALS			SUMMARY	
Vamp—292 x 35.....	102.20		Materials.....	222.95
Top.....			Direct Labor.....	43.75
Tip.....			Manufacturing Burden 40%..	17.50
Foxing.....			Material Burden 3%.....	6.69
Button Fly.....			Lasts—Patterns.....	3.75
Tongue.....			Royalty.....	8.00
Trimming.....			Conversion Cost.....	79.69
Top Facing.....	3.40		Manufacturing Cost.....	302.64
Cloth Lining.....			Selling 10%.....	38.00
Leather Quarter Lining.....			Administrative 5%.....	19.00
Sock Lining.....			Profit (25% or Conversion)...	19.92
Eyelet Stay.....	6.60		Selling Price.....	379.56
Back Stay.....	5.60			
Strap.....		117.80		
Covers.....				
Outsole.....	42.00			
Insole.....	11.00			
Counter.....	1.75			
Heel.....	7.50			
Top Lift.....	7.50			
Shank.....	1.50	71.25		
Box Toe.....	3.00			
Filler.....	.55			
Tongue Lining.....				
Eyelets.....	2.50			
Buttons.....				
Laces.....	1.65			
Heel Pad.....	.35			
Binding.....				
Braid.....				
Welt.....	6.75			
Lining Label.....				
Findings—Ind.....	12.25			
Cartons—Cases.....	6.85	33.90		
TOTAL.....		222.95		

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The Florsheim Shoe Company, replying to an inquiry regarding their budget methods, opened their letter with this significant question "What is a Budget? Is it not an allowance of so much money or so much material or so many hours of labor anticipated as necessary to complete a given item of manufacture?"

When interviewed regarding their use of a budget plan, executives of both the Douglas Shoe Company and the Edwin Clapp Shoe Company at first stated that no budget system was in use in their organizations. Further conversation, however, developed the fact that they had been using for some time estimated or standard cost methods.

Form 1 illustrates a type of cost estimate sheet in wide use in shoe factories and, as will be presently explained, is an integral part of a budget plan although it is usually thought of by executives in the industry as a cost accounting device.

PRACTICABILITY OF BUDGETING SHOE MANUFACTURING OPERATIONS

With the fact in mind that the installation of a budget plan in a shoe manufacturing plant is fundamentally simply a matter of applying to all departments the principle of the standard or estimated cost allowance, it is apparent that the possibilities of using budget methods in the industry are very considerable.

Mr. F. Richmond Fletcher of Scovell, Wellington & Company, speaking at the Twentieth Annual Convention of the National Boot and Shoe Manufacturers' Association made the following significant statement:

I am convinced that a budget program can be developed in any business so that the management will have an intelligent financial plan, and know what expenditures will have to be made each month, and what receipts are to be expected from various sources. The requirements for fixed capital and working capital can be determined and steps taken to provide the funds necessary to operate the business successfully without tying up too much capital in inventories.

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Budgetary control will never take the place of administration and management. Its purpose is not to deprive executives of the freedom of action essential to progressive management, but rather to provide information on which to base administrative decisions and administrative control.

As specific examples of the truth of Mr. Fletcher's statement the practices of two well known shoe companies may be cited. At the Gregory & Read Company past experience and predetermined standards are used in the preparation of a budget covering overhead expense items. Another New England shoe manufacturer finds it possible to go still further, applying the principles of budgeting not only to all of the expense accounts, but also to sales. Further specific and more detailed explanation of the methods used by these companies is given in subsequent sections.

PROCEDURE IN INSTALLING A BUDGET PLAN

A company wishing to install a budget plan may proceed in one of several ways. One method frequently employed is to start by preparing an estimate or a budget simply of those items and expenses which are most easily estimated in advance and over which control may most easily be secured. Such items would include overhead and general expenses such as selling expenses, administrative expenses and certain expenses which remain relatively constant throughout the year. After experience with the preparation and use of estimates of this sort the application of budget principles to other departments of the business is more readily made.

A second plan for instituting budgetary control is recommended by Mr. H. P. Cobb, of Cobb, Otto and Company, Accountants, Boston, Mass. Mr. Cobb says:

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To be most effective the budget must give consideration to the three phases of manufacturing, that is, labor, material and expense, as well as sales, but as the determination of these requirements depends very largely on the contemplated volume of production, the sales budget must be arrived at first. While it is true that conditions prevailing in the shoe industry have been such as to make any forecast of sales extremely unreliable, an estimate of the probable production is absolutely essential to the carrying out of the budget plan. The preparation of the preliminary sales estimate is effected by three factors: First, past attainments; second, economic conditions obtaining in the territory sold, and third, the policy of the business as it affects future operations. In other words, these three factors all have a bearing on the matter and should influence the minds of those responsible for the preparation of the sales budget. The estimate of proper production which is finally arrived at should not be exaggerated or be too optimistic but should be high enough to absorb the reasonable expenses of the business.

The labor, material and expense budgets are then prepared in somewhat the same way. The style, type and grade of shoe which it is proposed to manufacture having been decided upon, past experience and future expectancy are called upon to aid in figuring what it is going to cost to produce them in the quantity set by the sales budget. It is not very difficult to figure quite closely as to what the material cost will be, having in mind the upward or downward tendency of the market. Labor is somewhat more difficult for the reason that even those plants utilizing piece work to the greatest degree find that a decrease in volume results in an increase in the per pair labor cost, because there are few if any factories employing piece rates for all operations. In this connection it will be noted that non-productive labor, office labor and the like which are more or less constant regardless of the fluctuation of productions are not included in productive labor but are shown in the expense accounts. When preparing the expense budgets, attention must be given to the fact that certain expenses are fixed, some remain quite uniform regardless of volume of production and others will vary with the amount of business being done. Hence, it is quite essential that each item of the expense budget be measured by these three possible conditions.

Still a third method is that suggested by Mr. Fletcher of Scovell, Wellington & Company. This plan is outlined by him as follows:

In constructing the budget the first thing for management to determine is the amount of net profits that should be earned on the invested capital. In other words, if a concern desires to make 20 per cent. on its invested capital of \$500,000 its net

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profits before taxes must amount to \$100,000. If profits are calculated as 25 per cent. of the combined labor and burden cost, then the volume of sales necessary to produce \$100,000 of profit is equivalent to \$400,000 of labor and burden. If the average cost per pair for labor and burden is \$1.33 then the yearly output must be 300,000 pairs or 1,200 pairs a day on a basis of 250 working days.

In preparing the budget program it should be borne in mind that this volume of production is the minimum that will provide the desired profit. It sets a mark which must at least be equalled in the final correlation of the budget estimates.

It seems to me that this determination, first of all, of the profit that must be earned, gives the logical measuring stick for the whole budget program. If a manufacturer will determine the amount of profit he should earn in order to pay a proper return to his stockholders on the invested capital, and provide for some surplus in keeping with the risk involved, he has a definite basis for judging the effectiveness of the budget estimates of both the sales and the manufacturing departments. He then knows the minimum point to which he can afford to reduce profits for the sake of increased volume, and he has a definite control by which to judge the effectiveness of the whole budget program, both in its inception and in its operation.

The next step in the budget program is to secure a series of estimates from all divisions of the business to cover a period of three or possibly six months. The budget period should not be shorter than the merchandise turnover period of the business. These estimates include

- Sales
- Production
- Purchases
- Labor Cost
- Manufacturing expense
- Plant and equipment
- Administrative expense
- Selling expense
- Funds necessary to finance this program

The last step is to combine these figures into a working program based on proper correlation of all activities of the business. As an illustration, the manufacturing and sales divisions must adjust their estimates so that the volume of business for each style or class is in line with both sales possibilities and manufacturing capacity. Finally, the whole estimate must be in line with the possible financing.

The foregoing discussion has sought to emphasize the close relationship existing between standard or estimated cost statements and budgeting and to describe methods by which a budget plan may be put into operation. It is now in order to indicate the various ways in which budget principles are being applied by citing the practices and methods of a number of representative shoe manufacturers.

PREPARATION OF SALES ESTIMATES OR BUDGETS

Although it is common knowledge that the preparation of an estimate of future sales which will prove to be accurate and reliable is by no means an easy task, such estimates are being made in at least one case. This company describes its methods of estimating sales and coordinating sales with production requirements as follows:

Our business is set up in two departments, one the Contract Department, which makes goods to order; second, the Stock Department, where we keep a large quantity of goods on call. We estimate our sales on a six months' period by the sales for the corresponding six months previous. For example, we are entering into the works from January 1st, to July 1st, 1926, the same number of pairs of shoes as we sold from January 1st to July 1st, 1925. If we are confident that an increase in business will ensue, we sometimes increase the quantities from 10 per cent. to 20 per cent. The effect of running the factory on a uniform production basis such as this insures our labor cost and our burden. These shoes are placed in the works on the same cost basis on manufacturing, labor and burden, as shown in the previous six months' business.

When the six months' business is analyzed the weak spots are picked out and a drive is made to reduce certain fixed expense for the succeeding six months. That is the way we coordinate our sales expectancy with our production.

Budgeting Material Requirements

Reference was made in previous sections to the wide use of a Cost Estimate Sheet (Form 1). Such a form is nothing more or less than a budget of material requirements. The Florsheim Shoe Company uses such a plan which is described by the Company as follows:

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We allow a certain number of feet of upper leather for each pattern size and width cut and demand that our Cutting Department keep within the allowance or budget for same. The same thing is applied to trimmings and linings except that on linings our allowance or budget is in yards or fractions thereof. Sole leather material allowance or budgets are on a money basis; otherwise, the same as upper leather. These allowances for budgets are in reality predetermined costs based on past experience and continuous tests made to discover new methods and ideas of salvaging materials. They are readjusted as necessary at the start of each season unless radical changes in conditions warrant a change during a season.

Upper leather budgets are obtained by measuring the number of square inches of pattern cutting area and adding a ~~waste~~ ^{waste} percentage based on past experience. The term pattern cutting area is used because the number of square inches of a pattern is not the actual measurement of the pattern itself, but ~~a~~ ^a measurement of the pattern with allowances for the irregularity of the lines of the pattern. For example, if it is possible to lock the vamps because the throat of the vamp is wide open, we take that into consideration. Some vamp throats are open more than others and we have a set of measuring discs which tell us how far into the throat we should go when getting our pattern cutting area measurement. With the irregularities of each pattern taken care of we have the pattern cutting area of each pattern to which we add the proper percentage for the waste of each kind of leather based on past experience which gives us the budget allowance in footage for each style of shoe.

Other manufacturers making lower grade shoes buy cheaper leather and usually find considerable difference in the price per foot of each of the lower grades, so that it is necessary for them not only to have a budget in footage, but also in money or in some cases in money only.

When the budget is in money the leather should be charged to the cutting department at a fixed price, not at the purchase price. The difference in the price paid for each grade should be taken into consideration in making a fixed price for the grade.

The budget for cutting out soles, insoles, counters, box toes, under-lifting and top-lifting is based on cutting area measurement also, but the budget allowance is in money. Each sole leather item of raw material is charged to the sole leather cutting department at a fixed price with consideration given to the various selections of bonds, ballies or heel stock.

The budget for findings is based on past experience with the present market of each item taken into consideration. Past experience tells us the quantity of nails, tacks, thread, shellac, inks, dyes, dressings, etc., that are necessary to make a pair of shoes. These quantities computed at the present market price give us a budget that is right up to the minute at all times.

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This budget allowance may be used for one or more months depending entirely upon the market fluctuations. The budget allowance could be set up as a permanent budget allowance if each department was charged with a fixed price for each item it uses. When the items used are the same for many months, a fixed price may be used as it will be easier to make comparable statements of each month's cost.

Budgeting Expenses

As already mentioned, the preparation of an expense budget often forms the starting point in the installation of a budget program and in any case it is likely to prove one of the more simple and easier budgets to prepare. At the Gregory & Read Company estimates of overhead and general expense are made for each year in advance. Such estimates are based on experience of the company during the past year and the probable experience of the year to come. The estimates are made against each overhead account carried on the books, and at the end of each quarter the actual experience is checked against the estimates for the year. This check-up of course keeps the treasurer in touch with the actual expenses of the business and makes it possible for him to take the proper steps to reduce the various accounts and keep them more or less in balance during the year.

Expense Budget Methods of the Florsheim Shoe Company

At the Florsheim Shoe Company direct labor allowances or budgets are easily made because practically all of such labor is paid on a piece rate basis. The budget allowance for productive labor must be based on piece or day rates in effect at the time the budget is made. The budget allowance for each style of shoe is established according to the construction of the shoe. If day sheets are used in a shoe factory and the management operates the sheets on schedule, it is possible to control productive labor by grouping styles of shoes on each day sheet

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and figuring the labor that would be necessary to complete the shoes on each sheet. The result of this calculation should be comparable with the payrolls of productive labor for a particular style of shoe. The pre-determined cost of labor established on each day sheet would be the budget for productive labor.

The indirect labor allowance or budget is based on past experience and as it embraces exclusively hour rate workers it must be watched carefully. A foreman must keep within the allowance or budget or make a detailed report to his superiors as to why he does not keep within the amount of money set aside for that purpose.

The budget allowance for factory expense is based on past experience which indicates the quantity of each item involved. This budget allowance is revised to take care of any changes in the market price of each staple item involved, so that the budget not only reflects past experience but also the conditions likely to prevail during the budgeted period.

The experience of the Florsheim people with their factory expense budget indicates that a fixed price for a number of items involved is not satisfactory because the items change continuously. The allowances, therefore, are based on the experience during a period of five years production.

Overhead allowances or budgets are controlled in a large measure by production and great care must be taken to see that the production periods or past experience cover dull and busy seasons. The average production thus used creates a reserve during busy seasons and this reserve is drawn upon during dull seasons.

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The budget for burden or overhead is based on past experience over a period of at least five years as the Florsheim Company make practically only one grade of shoe, therefore an average cost per pair based on past experience is satisfactory. Other manufacturers making various grades of shoes will find it necessary to arrive at a separate budget for each grade. If both grades are made in the same factory it is necessary to analyze each grade from a burden or overhead standpoint. The better class of shoe requires higher grade supervision and extra productive labor to be performed on it and is allowed to remain on the last for a longer period than a lower grade shoe. Each additional operation delays the shoe in process and naturally calls for a larger overhead or burden cost.

If a careful analysis establishes a percentage differential between the lower and the higher grade it would be easy for the manufacturer to establish his costs based on the percentage differential he arrived at for each grade. If the overhead or burden cost exceeds the amount of money resulting from the multiplication of the budget for each grade, the overhead cost is high and if after further analysis he finds that the overhead or burden cost although high is to be expected, he will add a sufficient percentage to the burden or overhead budget of each grade to take care of the anticipated addition to the cost.

Machine royalty allowances or budgets are based on actual cost according to terms and conditions of the lease for each machine.

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The sales and advertising expense allowance or budget is easily compiled at the start of each season as every detail pertaining to sales and advertising is worked out by the sales engineers before the start of each season. They prepare a complete route list of each salesman, determine how many salesmen are necessary to keep the factories busy, and tell the company when and where to advertise. The plans are so complete that the allowance or budget based on predetermined costs is practically the exact cost of each season.

The budget allowance for selling expense is predetermined because all of the selling is on a commission basis. The men pay their own railroad fares and hotel bills and the only items that are in question in this account would be the traveling expenses of the executives which is chargeable to selling expense, postage, sales letters and the sales promotion department. The budget allowance for the last three items is based on past experience over a period of five years.

The budget for advertising is based on predetermined costs taking into consideration any new advertising contemplated and the elimination of any items of advertising used during the previous period. This budget is based on a percentage of sales set aside for advertising purposes, and, therefore, is not subject to market fluctuations. After the advertising department has received its allowance or budget it uses its best judgment in determining how and where this money is to be spent over the budget period.

Form 2, while not that used by the Florsheim Shoe Company illustrates a simple form of expense budget and is shown through the courtesy of Mr. Cobb. In the case of the Florsheim Shoe Company the

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budget officer or party responsible for the enforcement of the budget is the Auditor.

Summary of Estimated Receipts and Disbursements.

Having completed the estimates of income from sales and other sources and having prepared budgets of the probable expenses which will necessarily be incurred in producing this income the final step in the budget program is to coordinate these estimates. Such a budget might be drawn up as shown in Form 3, furnished through the courtesy of Mr. Cobb. The figures shown in this form are purely hypothetical but serve to illustrate the method.

A study of Form 3 shows that the total amount of the business is pro-rated equally but by increasing totals over the months covered by the budget period, that is one month to date and two months to date, etc., and in parallel columns, the total expenditures to date of each of the corresponding items is shown. This program is continued up to the sixth month, at which time the actual expenditures, less the closing inventory, is used in the actual column, thereby securing a comparison of the estimated and actual performances. It may be well to state in this connection that the inventory is not deducted in a lump sum but is analyzed and subtracted from the corresponding items. It is to be remembered, however, that the opening inventory on the books at the beginning of the budget period is included in the actual expenditures all the way through the budget period.

Although the figures used are purely hypothetical and seem to follow the budget figures closer than would probably be the case in actual practice, they illustrate a further advantage which can be obtained

SAMPLE BUDGET

Six Months Ended December 31, 1926

Production 165,000 Pairs

ITEMS	BUDGET FOR PERIOD	AVERAGE PER PAIR	1 MONTH TO JULY 31		2 MONTHS TO AUGUST 31		6 MONTHS TO DEC. 31		AVERAGES PER PAIR	
			BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL
PRODUCTION—PAIRS	165,000									
SALES.....	\$742,500.00	\$4.50	\$123,750.00	\$67,500.00	\$247,500.00	\$180,000.00	\$742,500.00	\$756,500.00	\$4.50	\$4.45
Less: Discounts Allowed.....	29,700.00	.18	4,950.00	2,550.00	9,900.00	7,000.00	29,700.00	29,750.00	.18	.17
Net Sales.....	\$712,800.00	\$4.32	\$118,800.00	\$64,950.00	\$237,600.00	\$173,000.00	\$712,800.00	\$726,750.00	\$4.32	\$4.28
MATERIALS USED										
Upper Materials.....	\$206,250.00	\$1.25	\$34,375.00	\$19,500.00	\$68,750.00	\$51,200.00	\$206,250.00	\$210,800.00	\$1.25	\$1.24
Bottom Materials.....	140,250.00	.85	23,375.00	12,300.00	46,750.00	33,200.00	140,250.00	146,200.00	.85	.86
Findings.....	8,250.00	.05	1,375.00	600.00	2,750.00	2,000.00	8,250.00	8,500.00	.05	.05
Sundries.....	18,150.00	.11	3,025.00	1,800.00	6,050.00	5,000.00	18,150.00	17,000.00	.11	.10
Cases and Cartons.....	13,200.00	.08	2,200.00	1,350.00	4,400.00	3,400.00	13,200.00	13,600.00	.08	.08
	\$386,100.00	\$2.34	\$64,350.00	\$35,550.00	\$128,700.00	\$94,800.00	\$386,100.00	\$296,100.00	\$2.34	\$2.33
PRODUCTION LABOR										
Cutting Room.....	\$33,000.00	\$0.20	\$5,500.00	\$2,850.00	\$11,000.00	\$7,400.00	\$33,000.00	\$30,600.00	\$0.20	\$0.18
Stitching Room.....	39,600.00	.24	6,600.00	3,750.00	13,200.00	10,000.00	39,600.00	42,500.00	.24	.25
Lasting Room.....	19,800.00	.12	3,300.00	1,650.00	6,600.00	4,800.00	19,800.00	18,700.00	.12	.11
Making Room.....	41,250.00	.25	6,875.00	3,600.00	13,750.00	9,800.00	41,250.00	40,800.00	.25	.24
Stocking Room.....	6,600.00	.04	1,100.00	900.00	2,200.00	2,000.00	6,600.00	8,500.00	.04	.05
Finishing Room.....	26,400.00	.16	4,400.00	2,550.00	8,800.00	6,600.00	26,400.00	26,450.00	.16	.16
	\$166,650.00	\$1.01	\$27,775.00	\$15,300.00	\$55,550.00	\$40,600.00	\$166,650.00	\$167,550.00	\$1.01	\$0.99
ROYALTIES AND RENTALS	\$13,200.00	\$0.08	\$2,200.00	\$1,200.00	\$4,400.00	\$3,200.00	\$13,200.00	\$13,650.00	\$0.08	\$0.08
MANUFACTURING EXPENSES	31,340.00	.19	5,223.00	5,911.00	10,446.00	11,776.00	31,340.00	31,687.00	.19	.19
(from Schedule 1)										
SELLING EXPENSES	46,125.00	.28	7,687.00	4,331.00	15,374.00	11,433.00	46,125.00	47,145.00	.28	.27
(from Schedule 1)										
ADMINISTRATIVE EXPENSE	28,750.00	.17	4,790.00	4,188.00	9,580.00	8,799.00	28,750.00	28,820.00	.17	.17
(from Schedule 1)										
TOTALS	\$672,165.00	\$4.07	\$112,025.00	\$66,450.00	\$224,050.00	\$170,608.00	\$672,165.00	\$684,952.00	\$4.07	\$4.03

Form 2

SAMPLE BUDGET
EXPENSES FOR THE SIX MONTHS ENDED DECEMBER 31, 1926

Production 165,000 Pairs

ITEMS	BUDGET FOR PERIOD	AVERAGE PER PAIR	1 MONTH TO JULY 31		2 MONTHS TO AUG. 31		6 MONTHS TO DEC. 31		AVERAGES PER PAIR	
			BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL
MANUFACTURING EXPENSES										
Freight and Express.....	\$3,600.00	\$	\$600.00	\$400.00	\$1,200.00	\$850.00	\$3,600.00	\$3,725.00	\$	\$
Power.....	1,700.00		283.00	150.00	566.00	410.00	1,700.00	1,650.00		
Heat.....	1,350.00		58.00	60.00	116.00	114.00	350.00	360.00		
Gas.....	75.00		12.00	10.00	24.00	25.00	75.00	80.00		
Electricity.....	200.00		33.00	30.00	66.00	52.00	200.00	220.00		
Water.....	90.00		15.00	12.00	30.00	25.00	90.00	92.00		
Bottom Stamp.....	75.00		12.00	7.00	24.00	17.00	75.00	70.00		
Factory Expenses.....	500.00		83.00	60.00	166.00	119.00	500.00	490.00		
Insurance.....	1,250.00		208.00	0.00	416.00	300.00	1,250.00	1,275.00		
City Taxes.....	1,500.00		230.00	0.00	500.00	0.00	1,500.00	1,485.00		
Depreciation—Equipment.....	2,000.00		333.00	333.00	666.00	666.00	2,000.00	2,000.00		
Depreciation—Buildings.....	2,000.00		333.00	333.00	666.00	666.00	2,000.00	2,000.00		
Lasts, Dies and Patterns.....	7,500.00		1,250.00	3,500.00	2,500.00	6,000.00	7,500.00	7,700.00		
Krippendorff Expense.....	400.00		46.00	250.00	132.00	700.00	400.00	400.00		
Machine Parts and Repairs.....	2,600.00		433.00	250.00	866.00	700.00	2,600.00	2,700.00		
Non-Productive Labor.....	7,500.00		1,250.00	700.00	2,500.00	1,700.00	7,500.00	7,440.00		
Total Manufacturing Expenses.....	\$31,340.00	\$0.19	\$5,219.00	\$5,911.00	\$10,438.00	\$11,776.00	\$31,340.00	\$31,687.00	\$0.19	\$0.19
SELLING EXPENSES										
Subscriptions and Dues.....	\$550.00	\$	\$91.00	\$100.00	\$182.00	\$150.00	\$550.00	\$500.00		
Collection Expense.....	500.00		83.00	75.00	166.00	170.00	500.00	550.00		
Branch Office Expense.....	300.00		50.00	83.00	166.00	166.00	300.00	300.00		
Freight and Express Out.....	300.00		50.00	20.00	100.00	100.00	300.00	375.00		
Advertising.....	1,500.00		250.00	200.00	500.00	450.00	1,500.00	1,600.00		
Travel Expense.....	2,000.00		333.00	300.00	666.00	625.00	2,000.00	1,980.00		
Salesmen's Expenses.....	550.00		91.00	100.00	182.00	200.00	550.00	580.00		
Shred Post.....	100.00		16.00	5.00	32.00	27.00	100.00	110.00		
Phone Expense.....	25.00		4.00	5.00	8.00	11.00	25.00	20.00		
Sundry Selling Expenses.....	100.00		16.00	20.00	32.00	30.00	100.00	80.00		
Bad Debts.....	2,000.00		333.00	48.00	666.00	534.00	2,000.00	1,865.00		
Sample Loss.....	1,000.00		166.00	0.00	332.00	0.00	1,000.00	1,140.00		
Commissions.....	37,000.00		6,166.00	3,375.00	12,332.00	9,000.00	37,000.00	37,825.00		
Total Selling Expenses.....	\$46,125.00	\$0.28	\$7,682.00	\$4,331.00	\$15,364.00	\$11,433.00	\$46,125.00	\$47,145.00	\$0.28	\$0.27
ADMINISTRATIVE EXPENSE										
Executive Salaries.....	\$15,000.00	\$	\$2,500.00	\$2,500.00	\$5,000.00	\$5,000.00	\$15,000.00	\$15,000.00	\$	\$
Office Salaries.....	7,500.00		1,250.00	1,000.00	2,500.00	2,170.00	7,500.00	7,600.00		
Office Supplies.....	150.00		25.00	20.00	50.00	41.00	150.00	140.00		
Postage.....	350.00		58.00	35.00	116.00	82.00	350.00	370.00		
Telephone and Telegraph.....	350.00		58.00	55.00	116.00	124.00	350.00	300.00		
Travel (Not Selling).....	300.00		50.00	42.00	100.00	80.00	300.00	250.00		
Sundry Administrative.....	800.00		133.00	100.00	266.00	175.00	800.00	640.00		
Interest on Loans.....	1,500.00		250.00	300.00	500.00	520.00	1,500.00	1,570.00		
Legal and Auditing.....	900.00		150.00	0.00	300.00	400.00	900.00	870.00		
Stationery and Printing.....	250.00		41.00	40.00	82.00	75.00	250.00	240.00		
Depreciation.....	400.00		66.00	66.00	132.00	132.00	400.00	400.00		
State Taxes.....	1,250.00		208.00	0.00	416.00	0.00	1,250.00	1,360.00		
Total Administrative Expenses.....	\$28,750.00	\$0.17	\$4,789.00	\$4,158.00	\$9,578.00	\$8,799.00	\$28,750.00	\$28,820.00	\$0.17	\$0.17

Form 3

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in those factories having suitable records. If the size of the business warrants, it is comparatively easy to keep a perpetual inventory of raw materials and there are certain short cuts which can be utilized to figure the value of work in process at the end of each month. If this practice is followed, then the amounts shown in the "Actual" columns on Form 3 are not the total expenditures to date, but the cost of producing the shoes which have been manufactured. These figures may be readily reduced to averages per pair for comparison with the estimates.

CONCLUSION

From the description of budget plans and methods given in the previous sections it is apparent not only that budgetary control is a practical managerial device whose use by shoe factories is of advantage but that such methods are standing the test of practicability through daily use in a number of concerns. While it is not the purpose of this report to attempt to outline a plan of budgetary control which might be used by all shoe manufacturers, sufficient material has been included to indicate in a broad way, at least, the lines which the installation of such a plan may well follow. In addition, the various specific examples of methods now in use indicate the ways in which particular companies are solving their problems in this respect.

The foregoing information is but a part of that contained in the files of the Policyholders Service Bureau regarding the budget practices of shoe manufacturing companies. The Bureau will be pleased to make available to interested policyholders additional information

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on this subject and will in turn be most happy to receive from them and others interested, statements of their experience in using the budget.

More than fifty companies in the shoe industry are insured under the Metropolitan group insurance plan. For these companies, the Policyholders Service Bureau has provided individual service on a wide range of problems including suggestions for standardization of product, elimination of "bloom," making slippery floors safe, accounting in the retail shoe business and many others. A brief digest of each service is given in Metropolitan Services to Business, No. 1--The Shoe Industry. We would be very glad to forward this booklet to group insurance policyholders upon request.

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BUDGETING FOR METAL WORKING ESTABLISHMENTS



POLICYHOLDERS SERVICE BUREAU
METROPOLITAN LIFE
INSURANCE COMPANY
HOME OFFICE . NEW YORK
Pacific Coast Head Office, San Francisco
British Isles Head Office . . . London
Canadian Head Office Ottawa

BUDGETING FOR METAL WORKING ESTABLISHMENTS

NOTE This report was prepared to answer specific questions presented by a Group insurance policyholder of the Metropolitan. It was compiled with special reference to the situation confronting the organization for which the work was done, and is not intended as an all-inclusive discussion of the subject. The report has been made available for general distribution because it is believed that much of its contents will be of interest to executives confronted with similar problems. In its present form, references or material of exclusive interest to the company for which it was prepared, have been removed.

Prepared by
Policyholders Service Bureau
Metropolitan Life Insurance Company
New York City
1930

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General Statement on Budgeting

Budgeting, in substance, consists of four major operations:

- 1 - Reviewing past experience and analyzing good and bad points therein.
- 2 - Framing a program which seems feasible to be carried out for a definite period of time, let us say, for three or six months.
- 3 - Providing a simple scheme of summary records to keep track of the experience with the execution of the plan.
- 4 - Organizing a group of responsible executives, whose business it shall be to follow through the undertaking, to check results, to adjust estimates and to see to it that action is taken on the facts that the budget program reveals.

The Forms required are briefly these:

- 1 - A summary statement of operations, comparing one period with another and showing the expense divided by departments, functions and elements.
- 2 - A statement of results obtained, expressed in a way to test propriety of current expenses. The results can be shown as goods manufactured, labor, hours, cost per dollar of products and similar units, appropriate for specific industries.
- 3 - An analysis of the organization showing increases or decreases in force.

- (a) for the overhead or executive, and
- (b) for the operating and producing staffs.

Budgeting is a system of reviewing, checking and enforcing plans. It cannot be done by a system of accounts or clerical subordinates, but must be the work of competent executives who know the meaning of the facts and who are able to judge results.

...oOo...

BUDGETING FOR METAL WORKING ESTABLISHMENTS

The following budget procedure is applicable to enterprises manufacturing specific metal products rather than to those which are engaged on special order work. The budget procedure is based on the practices of the Cleveland Metal Products Company as developed by D. C. Lowles, its Auditor, and C. E. Anderson, Manager of Department of Statistics and Commercial Research. Thoroughgoing faith of the chief officers of that Company in the budget has made possible developments not ordinarily found in metal working establishments. It has provided the opportunity to demonstrate the advantages of a sincere application of budget principles.

The outstanding feature of the budget system of the Cleveland Metal Products Company is the consideration given to forecasting reasonable sales expectations. The unit accepted by the Company for the accumulation of data and for purposes of forecasting, is the "County". This unit was chosen because the product of the Company obtains its best distribution in Rural sections where buying power is good and fuel conditions are favorable to the use of oil. A detailed analysis has been made for each "County" of all conditions which seem to affect the sale of its product, and the resulting data is entered on a "County Card". This card is shown as Form A.

On these cards, the shipments to dealers are tabulated monthly by counties, a report being sent to each District Manager every three months showing the county totals by items for his District. The Manager has a duplicate set of the cards and is advised of any additional information or changes. The card provides for the leading competition the Company has to meet. The information therefore was obtained mainly from a "poll" of oil stove users, conducted by magazines and journals in which the Company advertises. To supplement this condition of

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competition, the company's own salesmen check up from time to time by questioning the dealers they call upon. It is readily admitted by the Company that this data is not complete, yet it does give an exceptionally good "Cross-Section" view of County conditions and is proving in practice an accurate basis from which to work. The last Government and other reports of Crop, Financial, and Trade Conditions are carefully analyzed and used to modify the expectation of business to be done as well as to reveal the sections where special advertising or intensive work is required.

The "County Card", on the reverse side, shows what business has been done for several years back, and there is now being accumulated by means of the punched card system, monthly shipments. This knowledge of general conditions and best sales is considered essential for a reasonable estimate of prospective business.

As soon after November 1st as the October statistics are completed, the Statistical and Research Department make up detailed statements covering the ten months' business, January to October, plus an estimate from November to December. These statements are then forwarded to each District Manager for a preliminary estimate of the next year's business. These estimates after being carefully reviewed, are then translated into a "Manufacturing Budget" so that the Cost Department may develop a manufacturing program and figure standard costs for inventory purposes. As it is a six weeks' job to make entirely new standards for the new line of product, the necessity of beginning this work by November 15th is clearly seen.

After the preliminary sales estimates have been reviewed and the manufacturing program decided upon, the Budget Officer visits the District Offices in turn and works out with each Manager a revised

FORM A. (Front Side)

COUNTY	1	2	3	4	5	6
			STATE	TERRITORY NO.		Rating
Population	1920	Principal City		Square Miles		
	1910	Number of Families		Buying Power Per Capita		
	% Inc. or Dec.	% Urban		% of Saturation		
	Number of Farms					
Number of Illiterates	Number of Dealers			Number of dealers sold		
% Illiterates to Population	% Dealers to Families			Life of Stoves "Years" N.P. & Pur. Superflex Heaters		
FUEL CONDITION	GAS RATE		NO. OF CONSUMERS		CITY	

OTHER FUEL

COMPETITION	% Competitive	Competition	Kind Manufactured
SOURCE OF INCOME	Manufactured Products		Farm Products

REMARKS

Reverse Side

[illegible]

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Sales Budget, adjusting the ratios of the various products and increasing and decreasing items which appear to be out of line. Upon the Budget Officer's return to Cleveland the figures are again carefully reviewed and then approved by the General Sales Manager and the Directors.

Sales Expense Budget

Once the Sales Budget has been determined, it is the practice of the Company to establish a Selling Expense Budget, or to use the terminology of the Company, a "Sales Operating Expense Budget". The Sales Expense Budget is made up by Districts in detail under the following five groups of expense: office and general, salesmen, warehouse, transportation, and sales freight. The total expenses for the year for sales operating are then allocated to the individual months. In determining upon the Sales Operating Expense Budget, the addition or elimination of warehouse points is decided upon as well as the required office force and salesmen.

There is thereupon made up for each District a "Sales and Operating Budget", (Form B) giving a final percentage of total estimated operating cost to planned sales. The Sales and Operating Budget shows the actual results for each District in comparison with planned figures or established standards. The marginal allowance shown in the report is the cost to sell allowed the District by the Budget and is the total estimated operating cost computed as a percentage of anticipated sales.

The next logical step is the preparation of Budgets for General Administrative Departments and for Advertising. The Advertising Budget is usually worked out by setting up a definite percentage of estimated sales, - let us say 4% - as an Appropriation. This Appo-

FORM B
SALES AND OPERATING

District _____

Month _____

	ACTUAL		BUDGET		LAST YEAR	
	MONTH	% YR. TO DATE	% YR. TO DATE	% TOTAL YEAR	% YR. TO DATE	% TOTAL YEAR
Sales: -	:	:	:	:	:	:
Cock Stove and Heater	:	:	:	:	:	:
Utensil	:	:	:	:	:	:
Total Net Sales	:	:	:	:	:	:
Marginal Allowance	:	:	:	:	:	:
Cock Stove and Heater	:	:	:	:	:	:
Utensil	:	:	:	:	:	:
Operating	:	:	:	:	:	:
Office and General	:	:	:	:	:	:
Salesmen	:	:	:	:	:	:
Warehouse	:	:	:	:	:	:
Transportation	:	:	:	:	:	:
Sales Freight	:	:	:	:	:	:
Total Oper. C.S. & H.	:	:	:	:	:	:
Total Oper. Utensils	:	:	:	:	:	:
Total Operating	:	:	:	:	:	:
On	:	:	:	:	:	:
Marginal Allowance	:	:	:	:	:	:
Gain	:	:	:	:	:	:
Loss	:	:	:	:	:	:

priation is then referred to the Advertising and Sales Committee for development into a complete program of publicity.

Upon the completion of the Budgets for "Sales", "Selling Expense", "Advertising" and "Administration", the standard stocks or inventories at each warehouse point are then determined for each month of the year. Such standard requirements are based on 30 Days, 45 Days, 60 Days, or 90 Days shipments according to the distance from the factory, the speed with which the stock can be replenished, and the available storage space. Each sales District is split up by kinds of product and different styles, and the amount expected to be shipped each month is then entered on the District Warehouse Report for each stock carrying point.

From such Standard Stock requirements, it becomes an easy step to work back to a complete revision of the Manufacturing Program, which up to this point is considered only as preliminary. To the Manufacturing Department is left the task of coordinating the sales requirements with efficient manufacturing, avoiding on the one hand, the peaks and valleys due to making the factory force carry the load and thus giving an excessive labor turnover; while on the other hand avoiding an unbalanced and unduly large inventory with its burdensome carrying charge on the investment.

The manner in which the Production Schedule is worked out is illustrated by one of the Company's minor items on Form C shown herewith. The Form provides for the Estimated Working Days in each month; the Estimated Production per Day in terms of gross; the Estimated Production for the Month; and the Actual Production per Day and for the Month; the Actual Shipments to Dealers and District Offices Last Year and for the coming year; the Planned Shipments for the Current Year; the Stock on Hand after allowing for Planned Shipments; the Branch Stock Standard

FORM C-
PRODUCTION SCHEDULE - NO. 441 WICKS
FOR THE CALENDAR YEAR

INVENTORY AT CLEVELAND JAN. 1ST.	ESTIMATED PRODUCTION PER DAY	ESTIMATED PRODUCTION PER MONTH	ACTUAL PRODUCTION PER MONTH	ACTUAL SHIPMENTS TO DIRS. & DIST. PRECEDING CALENDAR YR.	ACTUAL SHIPMENTS TO DIRS. & DIST. CURRENT CALENDAR YR.
PRODUCE IN JANUARY TOTAL MADE TO JAN. 31 INCL.	24	0	8,568	8,612	
PRODUCE IN FEBRUARY TOTAL MADE TO FEB. 29TH	23	8	184	25,134	
PRODUCE IN MARCH TOTAL MADE TO MARCH 31ST	23½	5	117½	16,522	
PRODUCE IN APRIL TOTAL MADE TO APRIL 30TH	24	5	120	17,924	
PRODUCE IN MAY TOTAL MADE TO MAY 31ST	23½	3	70½	12,871	
PRODUCE IN JUNE TOTAL MADE TO JUNE 30TH	23	0	0	14,445	
PRODUCE IN JULY TOTAL MADE TO JULY 31ST	24	0	0	70,374	
PRODUCE IN AUGUST TOTAL MADE TO AUG. 31ST	23½	1	23½	11,307	
PRODUCE IN SEPTEMBER TOTAL MADE TO SEPT. 30TH	23	2	46	81,681	
PRODUCE IN OCTOBER TOTAL MADE TO OCT. 31ST	25	2	50	5,763	
PRODUCE IN NOVEMBER TOTAL MADE TO NOV. 30TH	21½	0	0	2,559	
PRODUCE IN DECEMBER TOTAL MADE TO DEC. 31ST	20	3	60	90,008	
			8,540	4,080	
			103,264	94,083	
				4,369	
				98,462	
				4,609	
				103,061	
				1,911	
				104,972	

FORM C (CONTINUED)

INVENTORY AT CLEVELAND JAN. 1ST	BUDGET SHIP- MENTS TO DRES. & DIST. CURRENT CAL- ENDAR YR.	TOTAL STOCK AFTER DEPU- TING BUDGET SHIPMENTS - DR. 21,157 29,725	BRANCH STOCK PER SALES DE- PARTMENT	DIFFERENCE CLEVELAND STOCK	STOCK IS % OF NEXT MONTH'S BUDGET SALES	ACTUAL CLEVELAND STOCK	ACTUAL BRANCH STOCK	ACTUAL TOTAL STOCK
PRODUCE IN JANUARY TOTAL MADE TO JAN. 31ST INCL.	9,224 9,224	9,224 20,501	8,044	12,467	69%	8,568	21,157	29,725
PRODUCE IN FEBRUARY TOTAL MADE TO FEB. 29TH	18,000 27,224	8,496 28,997	9,520	19,477	101%	2/15 2/29		
PRODUCE IN MARCH TOTAL MADE TO MARCH 31ST	19,203 46,427	2,283 26,714	9,130	17,534	128%	3/15 3/31		
PRODUCE IN APRIL TOTAL MADE TO APRIL 30TH	13,737 60,164	3,643 30,257	7,742	22,515	146%	4/15 4/30		
PRODUCE IN MAY TOTAL MADE TO MAY 31ST	15,470 75,634	5,318 24,939	6,446	18,493	146%	5/15 5/31		
PRODUCE IN JUNE TOTAL MADE TO JUNE 30TH	11,828 87,462	11,828 13,111	4,892	8,219	146%	6/15 6/30		
PRODUCE IN JULY TOTAL MADE TO JULY 31ST	5,633 93,095	5,633 7,478	4,397	3,081	123%	7/15 7/31		
PRODUCE IN AUGUST TOTAL MADE TO AUGUST 31ST	2,495 95,590	889 8,369	5,119	3,248	82%	8/15 8/31		
PRODUCE IN SEPTEMBER TOTAL MADE TO SEPTEMBER 30TH	3,983 99,573	2,641 11,008	6,135	4,873	106%	9/15 9/30		
PRODUCE IN OCTOBER TOTAL MADE TO OCTOBER 31ST	4,600 104,173	2,600 13,608	5,796	7,812	167%	10/15 10/31		
PRODUCE IN NOVEMBER TOTAL MADE TO NOVEMBER 30TH	4,674 108,847	4,674 8,934	4,557	4,377	250%	11/15 11/30		
PRODUCE IN DECEMBER TOTAL MADE TO DECEMBER 31ST	1,752 110,599	6,888 15,822	7,257	8,565	93%	12/15 12/31		

which subtracted from the total stock on hand, gives the Home Office Stock; the percentage this bears to the month's sales; and the Actual Home Office, Branch and Total Stock. From the Production programs final revised factory departmental operating budgets are then made up.

The foregoing information, which deals with Sales and Production Budgets should be supplemented with the Financial Budgets of the Company, which information was first supplied to the Fabricated Production Department of the Chamber of Commerce of the United States and appears as a part of its pamphlet, "Budgeting for Business Control."

The first form is an Estimated Operating Statement; the figures given are hypothetical and used for purposes of illustration. (See Form D).

The second form is an Estimated Statement of Loss and Gain from which it is easy to forecast changes in the Balance Sheet over the budget period. (Form E).

In regard to preparing the Monthly Profit and Loss Statement, it was stated to the Fabricated Production Department by D. C. Lowles, Auditor of the Cleveland Metal Products Company that the cost of goods sold is computed on the budget or standard cost, the excess or reduced cost being taken up as a separate item. Inventories are all figured at standard. These standards may be changed during the year if conditions warrant it, and are always revised for inventory purposes at the end of the year.

From the Estimated Statement of Loss and Gain, an Estimated Balance Sheet may be made to reflect the changes arising during the budget period. In preparing such an Estimated Balance Sheet, it is necessary to determine what portion of the estimated surplus should be

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shown on the Estimated Loss and Gain Statement as a distribution to dividends. For this purpose a capitalization of \$8,000,000 is assumed, of which \$3,000,000 is Preferred Stock.

Budget Estimated Operating Statement
For The Year

<u>Net Sales:</u>		<u>Per Cent of</u> <u>Total</u>
Class "A".....	\$8,000,000	80.0
Class "B".....	800,000	8.0
Class "C".....	1,000,000	10.0
Class "D".....	200,000	2.0
Total.....	\$10,000,000	100.0
<u>Production Costs:</u>		<u>Per Cent to Sales</u>
Class "A".....	4,800,000	60.0
Class "B".....	560,000	70.0
Class "C".....	650,000	65.0
Class "D".....	160,000	80.0
Total.....	6,170,000	61.7
		<u>Per Cent.</u>
Gross margin.....	3,830,000	38.3
<u>Selling:</u>		
Sales Administration.....	200,000	2.0
General sales department expense.....	50,000	.5
Special promotion, etc.....	50,000	.5
District operating expense.....	1,600,000	16.0
Advertising "A".....	400,000	4.0
Advertising "B".....	50,000	.5
Advertising "C".....	100,000	1.0
Total.....	2,450,000	24.5
Net Margin.....	1,380,000	13.8

FORM D.

Budget Estimated Loss and Gain
For The Year

Net Gain from operating statement.....	\$1,380,000
Cash discount receivable.....	50,000
Dividends.....	20,000
Miscellaneous items.....	10,000
	<u>\$1,460,000</u>

Deduct.

Net interest cost.....	\$100,000
Estimated inventory depreciation...	260,000
	<u>360,000</u>
Federal taxes and contingencies.....	150,000
Total available for dividends and surplus.....	<u>950,000</u>

FORM E.

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The loss and gain shown on Form E is \$950,000. If dividends on Preferred Stock at 7% of \$210,000, and on Common Stock at 8% of \$400,000, - or total dividends of \$610,000 are deducted from the profit of the period, there is available as an additional surplus \$340,000. On the following Estimated Balance Sheet, (Form F) prepared by D. C. Lowles, the Auditor of the Cleveland Metal Products Company, such \$340,000 increases in surplus is reflected together with other changes.

	Balance Beginning of Year	Changes During Year	Estimated Balance End of Year
Current:			
Cash.....	\$25,000	\$15,000	\$40,000
Notes and accounts receivable less reserve for doubtful.....	1,225,000	125,000	1,350,000
Government securities.....	1,250,000	100,000 ^x	1,350,000
Inventory.....	3,200,000	400,000	3,600,000
	5,700,000		6,140,000
Subsidiaries.....	850,000	50,000 ^x	900,000
Investment and other assets.....	475,000	25,000	500,000
Deferred.....	500,000	5,000	505,000
Plant and equipment less depreciation.....	4,500,000	100,000 ^x	4,600,000
Total Assets.....	12,025,000		12,345,000
Liabilities.			
Current and accrued:			
Accounts payable.....	275,000	15,000 ^x	290,000
Accrued taxes, etc.....	80,000	20,000	100,000
Reserve for federal taxes and contingencies,	175,000	25,000 ^x	200,000
Funded Debt (Notes).....	3,000,000		3,000,000
Capital Stock (Preferred).....	3,000,000		3,000,000
Capital Stock (Common).....	5,000,000		5,000,000
Surplus.....	495,000	340,000	835,000
	12,025,000		12,345,000

x - Deductions.

FORM F.

AN ECONOMIC SERVICE TO BUSINESS

This is one of numerous publications issued by the Policyholders Service Bureau in the interest of better management in business. The Metropolitan has good reason for desiring to contribute, so far as practicable, to improved practices in management. Effective management is a vital factor in the continuous and profitable operation of business enterprises and helps to bring about steady work and regular income for Metropolitan policyholders, who number more than one out of five of the general population. An even greater proportion than one-fifth of the employees in commerce and industry are insured by the Metropolitan Life Insurance Company. The relationship between prosperous policyholders and the company's progress is obvious.

Because of its great stake in the nation's economic life, the company has set up the Policyholders Service Bureau to carry out a program of economic service to business. The Bureau staff is made up of specialists in the various fields of management -- in business organization, office management, accounting and finance; in marketing, distribution, advertising and sales management; in production and personnel management; in business and economic research; in industrial health and accident prevention.

Investigations of subjects of current interest to business executives are continually being carried on by the Bureau's specialists in these various fields of management. Reports of such of these investigations as are of general interest are published from time to time. For additional information about the work of the Bureau or its published reports, address:

Policyholders Service Bureau
Metropolitan Life Insurance Company
One Madison Avenue
New York City

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